Economic Affairs

Volume 22 ANNUAL NUMBER Nos. 1-2

Politics in India

Suddenness has become an important feature of Indian politics in recent years. In 1969 suddenly appeared in power Srimati Indira Gandhi who dividing the Congress by a fine surgical operation remained in State power with the support of Moscow-link CPI (Communist Party of India) and 'nationalist communist', CPI(M) [Communist Party of India (Marxist)], a breakaway of CPI, dynamically wielding both organizational and governmental strength to higher strength, building a pyramidical internal organizational structure founded on a para-military youth organization, and, externally, dicriminating the western world against the Soviet-led communist world, of which she has been a pragmatic friend and follower.

When found repeated assaults of Courts of Law and people's upsurges miserably threatening her power-position Srimati Gandhi hit back all with all her masculine strength. Operation Emergency enveloped the whole country suddenly on 26 June 1976 and overnight thousands were thrown to prisons and both Constitution and judiciary were made 'social philosophy' oriented or handmaid of the Executive. The sudden reemergence of Sri Jayprakash Narayan and the militant oppositions suddenly disappeared, if not evaporated without any resistance from the people who were then by their side with a vow to death.

Then suddenly came from Delhi the Prime Minister's 20 Point Program almost substituting the costly national fifth five year plan, and suddenly again was dropped from Delhi the Prime Minister's son as number two in national leadership and number one in the leadership of Youth Congress. Suddenly the number two delivered to the nation his 5 Point Program, making mother's and son's combined 25 Point Program the national economic program.

Suddenly Srimati Indira Gandhi and her son jointly began to brand CPI as great betrayer to the cause of national freedom struggle, and the CPI(M), by implications, too.

More suddenly the Prime Minister announced general election, of course without lifting Emergency. Suddenly burst out from her catchy fold such veterans as Sri Jagjivan Ram and such ardent followers as Sri H. N. Bhauguna and Srimati Nandini Satpathy all branding her a dictater, and immediately forming a party suitably named Congress for Democracy.

Suddenly Janata Party, a first approximation of merger of four parties—Congress (O), Jana Sangh, Socialist and B.L.D.—found a great ally in Jagjivan Ram and his Congress for Democracy; and suddenly found CPI(M) and other Left parties in these 'right reactionaries' combine a nook to survive, rest, and start again from grass root. Suddenly CPI, which had been at the edge of virtual extinction in the hands of Srimati Indira Gandhi and her son (no matter what was the anguish, resistance, anger and mending by some foreign power), found a narrow passage to infiltration into the Congress again.

On the economic front with the clamping of Emergency down came in rush the panicky prices, and suddenly again prices began to 'take off', leaving back the number of unemployed to rise by leaps and a number of industries to get sick acutely and rapidly to contaminate the whole economy.

All the suddennesses and rapidities are said to be for banishing poverty, from the country and ensuring growth with social justice. The people have been speechless in awe and wonder. For an inch advance in power politics is a mile advance in their poverty.

What we find today is the replica of what we found in the days of Gandhiji, who developed the glory of authoritarianship as a nondescript. This was the result of taking to rosy path of constitutionalism in preference to thorny path of revolution. Subhas Chandra Bose rebelled against this path of constitutionalism, and he was crushed by his countrymen led by authoritarians. And today those who take to the path of revolution are neither Indians nor non-Indians and so they are either utopians or hirelings of some foreign power (s). Let the intelligentsia of this country think all this and in terms of a revolutionary 'alternative' to what is. The country wants an alternative and the world too.

Land Reforms in India

Earlier after independence, land reforms measures were initiated in the country. The main objects were :

(a) The abolition of the intermediary system that prevailed between the State and the tiller of the soil ;

(b) Conferment of ownership right on the cultivating tenants in the land held under their possession ;

(c) To fix ceilings on agricultural land holdings. To eliminate parasitic existence on land for landlords who contributed nothing to agriculture but lived on the labour of tenants, sharecroppers and agricultural workers.

(d) To rationalise the record of rights on land. To protect the rights of tenants, etc.

(e) Consolidation of holdings. To apply modern techniques of agriculture and utilising the dependable irrigation facilities.

By now the intermediary tenures in land, known variously as zamindaris, jagirdaris, inams, etc. have been abolished almost all over the country. More than 20 million tenants and subinfeudatories have been brought in direct contact with the State. In addition, approximatly, 16 million acres of waste, fallow and other categories of land have vested in the State.

The planners laid down the ingredients of the secutity of tenure as follows :

(i) The rent payable by the cultivating tenant to the land-lord should be so fixed as not to exceed 1/5th to 1/4th of the gross produce.

(ii) No tenant should be evicted except according to the law which would specify the grounds of eviction. These grounds in the main were non-payment of and abuse of the land usefulness.

(iii) Declaration of the rights of tenants in the land as permanent, heritable and transferable.

To achieve results legislative measures have been taken throughout the country. The maximum rates of rent have been fixed at levels not exceeding those noted above in all the States except Punjab, Haryana, Tamil Nadu and the Andhra area of Andhra Pradesh. In Punjab and Haryana fair rent is 33⅓ per cent of the gross produce, in Tamil Nadu it varies from 33⅓ per cent to 40 per cent of the gross produce. In Andhra Pradesh the fair rent varies between 25 per cent to 30 per cent of the gross produce. Everywhere in the country the law regulates the conditions under which only a tenant can be evicted from the land.

More than a dozen States have enacted laws conferring ownership rights on the cultivating tenants. Notable among them are Maharashtra, Gujarat, Kerala, Karnataka, Assam, Himachal Pradesh, Jammu & Kashmir, Rajasthan, Madhya Pradesh and Orissa. In three or four other States, the tenants have been given the optional right to purchase the land held under their cultivation by paying to the landlord a premium that is fixed by the appropriate authority according to the terms of the law. Everywbere the premium is so fixed as not to be beyond the paying capacity of the tenant. Steps are being taken for persuading all the remaining States to enact laws automatically conferring ownerhip rights on the cultivating tenants.

While it is difficult to assess the extent of work done by way of implementation of the legislative measures noted above, it is reasonable to say that in Gujarat, Maharashtra, Kerala, Himachal Pradesh and Jammu & Kashmir the system of tenancy has been for all practical purposes abolished. A great deal of work has been done in most of the remaining States. One cannot make a precise estimate of the number of tenants who have acquired ownership rights in the land held under their personal cultivation. However, data collected so far indicate that around 4 million tenants have come to acquire ownership rights over 3·7 million hectares of land.

By now more than a quarter of the cultivable land in the country has been consolidated (a little over 34 million hectares). In Punjab, Haryana and Western Uttar Pradesh, the work is complete. Legislative measures for consolidation of holdings, either on a voluntary or compulsory basis, have been undertaken in most States of the country. However, care is taken that before consolidation operations are undertaken in any area, the record of rights is rationalised. Unless this is done, tenants and share-croppers will be rendered all the more insecure.

Alongwith the measures outlined above, the State and Union Territories have gone on distributing large tracts of wastes, fallow and other categories of land that can with some effort be brought under the plough. It is estimated that more than 6·5 million hectares have thus been distributed over the past 15-20 years.

Distribution of Income and Saving Rates in Less Developed Countries : A Case Study India

Inder P. Nijhawan*

The complexity of saving behavior and limited contribution of per capita income as an explanatory variable has forced economists to search for alternative explanations of saving behavior.[1] Attention is drawn to appalling degree of income inequality and disproportionate share of property income in national income of less developed countries (LDC's).[2] It is suggested that personal and functional distribution of income may permit high saving rates in LDC's, notwithstanding low per capita income. In what follows, an attempt is made to test the validity of these hypotheses with special reference to India. The income distribution effects on saving are studied by (a) function, (b) by size, and (c) by sector.

It is often hypothesized that income recipients behave differently with repect to both the source of income and its relative size. In general, the factors of production are divided into two broad catagories : labor and capital and the stress is laid on the differential response of saving to income under each category (wages and profits). It is hypothesized that the marginal propensity to save of the wage earner is substantially less then that of the capitalist (Leibenstein[3] and Lewis[4], however the extreme position and assume wage earner's marginal propensity to save is zero or close to zero) and hence, aggregate saving rates are a unique function of sectoral or functional distribution of income.

It is claimed that :

> Although per capita income in Indin is low (it is equally true of other LDC's), the possible rate of savings does not have to be significantly lower than developed countries, for proportion

---

* Associate Professor of Economics Pagetteville State University, U.S.A.

> of savings generating income or gross property income, in both cases is approximately the same...[5]

For the purpose of statistical analysis, the above hypothesis can be divided into three parts :

(i) The per capita income in only one and not necessarily the most important determinant of saving rates (in the LDC's),

(ii) Share of property income in total national income in the LDC's is at least as high, if not higher, than advanced countries, and

(iii) The coefficients attached to (or marginal and average propensity to save of) property income is significantly higher than that attached to wage (and/or salary) income.

The validity of sub-hypothesis (i) is substantiated by several statistical studies.[6] However, none of these studies test the hypothesis with reference to India. Time series data for India, however, also discount the relative significance of per capita income as a determinant of saving rate. The pertinent statistical results are summarized in Table 1.[7]

Reserve Bank of India (RBOI) and National Council of Applied Economic Research (NCAER) estimates differ widely because of the different methodology employed by each. The dissimilarity is also reflected in the different R^2 obtained on the basis of NCAER and RBOI estimates. If the latter's estimates are used, the linear influence of y/p on s/y seems negligible. Not only does the y/p variable explain little of the variance of s/y, it is, as the F-tests show, statistically insignificant in three out of four cases. Whereas, for the RBIO data the standard error of the intercept is so large that it is statistically insignificant, it is not so when NCAER's indirect estimates of saving are used. As the t values indicate, the intercepts lack significance at the .05 level in all the four estimates. It is also important to note that in the Indian case the Durbin-Watson test does not indicate presence of serial correlation at the .05 level.

The results presented above should, however, be viewed with caution. The parameter estimates arrayed in the Table are the results of fitting a single linear Keynesian saving function. The questionable accuracy of national income estimates in the LDC's goes without saying. Since the quality of data regarding population is no better, estimates of per capita income must be subject to large margin of error. The difficulties are multiplied and the probably margin of error made larger when an attempt is made to draw country comparisons over time and space.

Table 1

Time Series Analysis ; Parameter Estimates for Saving in India

Agency	Dedendent Variable	Independent Variable	Intercept	Regression Coefficient	Std. error	N	R²	F	D-Watson
RROI	s/y	y/p	−5.0887	·04529	.0028	9	.2683	**2.562	1.676
(1960)			**(− .6704	**(1.6007)	*7.5907				
RBOI (revised)	s/y	y/p	−9.54122	·06150	·0041	9	·2430	**2.242	1.272
1966			**(− .8671)	**(1.4974)	*11.0032				
NCAER (direct	s/y	y/p	−6.79716	.00573	.0026	12	.3226	**4.763	……
estimate)			**(− .95446)	(2.1825)	7.1215				
NCAER (indirect	s/y	y/p	−9.59406	.06952	.0260	12	.4163	7.132	……
estimate)			**(−1.36100)	(2.6706)	7.0492				

* Represents standard error of intercept.

** Lacks significance at .05 level.

Figures in parentheses indicate t values.

The validity of sub-hypothesis (ii) is supported by the data in Table 2. As we descent the income brackets, relative share of property income in national income increases and that of wages (or compensation of employees) falls. The overwhelming relative share of unincorporated enterprises in national income in the LDC's vis-a-vis advanced countries is also envident.

Table 2

Factor Share in National Income, late 1950's :
Countries ground by per capita income

	No. of Countries	Share in National Income (%)			
		Compensation of employees	Income of unincorporated entrepreneur	Income from assets	Household property income
Bracket I($575-1,000 and over)	12	60.4	21.2	18.4	8.4
Bracket II ($200-574)	9	55.4	16.6	18.0	9.4
Bracket III ($100-199)	8	47.2	32.2	20.6	11.2

Source : Adapted from Simon Kuznets, Modern Economic Growth, p. 405.

If sub-hypotheses (i) and (ii) are accepted and if it can be proved that the marginal propensity to save of (or the coefficient attached to) property income is greater than that of wage or salary income, it can be logically inferred that the rate of saving in the LDC's need not be substantially lower than advanced countries.

Of late, two laudable attempts have been made to statistically test the validity of sub-hypothesis (iii). Houthakker,[8] using an analysis of co-variance, tests the hypothesis for a sample of twentyeight (developed and underdeveloped) countries. Saving per capita is assumed to be a linear function of each type of income. Using time series and cross-section data and, assuming a linear relationship, Houthakker finds that :

> The coefficient of income from property and entrepreneurship is about ten times as large as the coefficient of employment income ; this difference is highly significant. Furthermore, the two income coefficients within countries are twice as large as they are between countries ; in fact the coefficients of employment income are not significantly different from zero.[9]

Williamson[10] has also made an attempt to test the sub-hypothesis regarding differential response of saving propensities to different types of incomes. The distinguishing feature of Williamson's study is that it uses temporal and intertemporal data for a group of eight Asiatic countries which Houthakker omits completely. The Willismson's study supports the Houthakker's conclusion that there is very large difference between the marginal propensity to save of property and nonproperty income. "In all the tests, the B coefficients (of wage income) range between zero and .10 while (coefficients of property income) lies between 0.25 and 1.47."[11] It is important to note that in the Asian saving function "the size of coefficient attached to non-labor income exceed Houthakker's (global saving function) by three times (0.66 as compared to 0.24)".[12]

Williamson, even though he pools a sample of eight Asiatic countries, excludes India from his analysis owing to lack of data. The pertinent information regarding India is, however, available from several sources.[13] While not unmindful of the arbitrary nature of statistical information, we, following Houthakker and Williamson, subjected Indian data to similar tests. The results are presented in in Table 3.[14] Indian data appear to vindicate the hypothesis tested by Houthakker and Williamson. The coefficient attached to property income is at least two or four times more than that attached to wage income.[15] The regression coefficients estimated from log transformd data are elasticities, and, as is evident, are much larger for property income than wage income.

In interpreting these results, however, considerable caution is imperative. Like Williamson and Houthakker, our analysis is based on least square regression analysis postulating linear relationship between per capita income and property and wage income. The quality and reliability of data cast a serious suspicion on the results obtained. Added to these are the difficulties emanating from lack of correspondence between the accounting concept of property and wage income and its theoretical counterpart.

While one cannot minimize the importance of these difficulties and the consequent circumspection imposed on results obtained, the enormous role played by the functional distribution of income as a determinant of aggregate saving can scarcely be doubted. One may also infer from the results obtained that its relative significance is greater in the LDC's than in the developed countries. Kuznets rightly points out that even if all the private property income in developed

Table 3

Time Series Data for India (1949-1957) : Parameter Estimate for Saving

Sample description	Dependent variable	Independent variable	Intercept B_0	Regression coefficients B_1	B_2	N	R^2	F	D-Watson
1. NCAER (net saving)	s/y	Property income and wage income	—45.371 (— 6.508	2.1432 (5.7861)	·17732 (.5228)	10	.9027	38.6522	2.242
				After log transformation					
2. NCAER (net saving)	s/y	property income and wage income	—16.514 (— 6.552)	4.04179 (5.2851)	.94777 (.84859)	10	.9120	38.865	2.0554
3. NCAER (gross saving)	s/y	property income and wage income	—44.491 (— 5.996)	1.98451 (5.03415)	.487498 (1.3481)	10	.9120	37.414 *	2.06617
				After log transformation					
4. NCAER (gross saving)	s/y	property income and wage income	—0.729 (—5.693)	2.487 (4.4157)	1.0447 (1.42848)	10	.900	31.853	* 1.89252

B^1 and B^2 represent the coefficients of property and wage income respectively.

Figures in parentheses indicate t values

* Indicates lack of significance at .05 and .01 levels.

countries is saved, its contribution to private capital formation cannot be substantial given its relatively small share in total income. Indeed,

> Judging by the estimates for recent years, no more than half of the household saving to finance capital formation can be credited to household income from assets net of taxes.[16]

However, Kuzents concedes that in the earlier periods—the middle to late nineteenth century or earlier twentieth century—when property income share in national income was much larger and direct taxes much smaller, property income could be a potent source of saving in these countries. Since the LDC's, in a way, mirror the share of property income in the national income may be of critical significance from the standpoint of capital formation and development of these countries.

It is often hypothesized[17] that the amount that nation saves depends not only on the absolute level of national (or per capita) income but also on the skewness of its distribution. In other words, it is claimed that saving rates are closely related to income inequality. Since the distribution of income in less developed countries is believed[18] to be more unequal than in advanced countries, it is hypothesized that saving rates in the former should be substantially higher than is generally conjectured on the basis of absolute level of national (or per capita) income.[19] The hypothesis appears to rest on three tacit premises :

(a) that the average and marginal propensity to save of upper income groups is greater than the average and marginal propensity to save of lower income groups. In other words, the Engel curve is concave upward with a slope $ds/dy > 0$ and that consequently, the Keynesian consumption function is valid.

(b) There are parallel movements (inter-temporally and temporally) between income inequality (no matter what index or measure is adopted) and saving rates.

(c) The degree of inequality of incoms in the LDC's is greater than in advanced countries.

We shall attempt to ascertain the statistical basis of each of these premises. The validity of premise (a) appears to be supported by the infomation contained in Tables 4 (a) and (b), Tables 4 (a) and (b) are self-explantory. Like income, the distribution of savings is skewed and concentrated in the upper income brackets. The saving income ratio among lower income groupes is not only negative, but ranges as high as 33% in Table 4 (a) and 40% in Table 4 (b).

Since premise (a) is believed to stem from Engel's Law, it may be fruitful to probe into its empirical validity. Houthakker, drawing upon expenditure data for several development and underdevelopment countries' finds that, "elasticities for food are all significantly less than one and, therefore, confirm the Engel's Law abundantly."[20]

The evidence presented above pertains only to average propensity to save. From the standpoint of the main hypothesis, however, a knowledge of the distribution of income between consumption and saving at the margin is of capital significance. Unfortunately, no statistical evidence is available to affirm or refute the hypothesis that the marginal propensity to save of upper income groups is substantially higher than lower income groups.[21] Keynes used intuition to substantiate the above hypothesis, as is evident in the following statement ;

> But apart from short-period changes in level of income, it is also obvious that higher absolute level of income will tend, *as a rule*, to widen the gap between income and consumption. For the satisfaction of the immediate primary needs of man and his family is usually a stronger motive than motives towards accumulation, which only acquire effective sway when a margin of comfort has been attained. These reasons will lead, *as a rule*, to greater proporation of income being saved, as real income increases.[22]

Table 4 (a)

Ratio of Household Saving to Disposible Income by Income Class Sample Survey for Selected Countries

Income Class	Ceylon	India		Thailand		Mexico
(% of total Household in Sample Survey)		Rural	Urban	Rural	Urban	Urban
	1963	1962	1960	1963	1963	1960
Lowest 20	-21	-6	-21	—19	-33	0
Next 20	-13	-3	...	-20	-24	8
Next 20	-8	0	-8	-14	-7	-14
Next 20	-7	2	-5	7	-14	-19
Next 5	-6	5	-1	...	...	27
Next 5	-6	6	0	...	...	...
Next 5	1	9	7	...	...	...
Next 3	3	10	11	2	23	22
Next 1	12	19	18	...	...	...
Next 1	6	16	33	...	...	...
Average	-4	5	3	14	-16	-2

Source : U. N. World Economic Survey, 1965, Part 1, p. 40.

Table 4 (b)

Saving Pattern in Relation to Income for Few Selected Developed Countries

Income Units	Share in Aggregate Net Saving for each Tenth		
	Great Britain		United States
	1941-52	1949	1950
Top Tenth	225%	105%	73%
Second Thnth	20	26	20
Third Tenth	-13	13	11
Fourth Tenth	-13	8	10
Fifth Tenth	4	1	4
Sixth Tenth	3	...	-1
Seventh Tenth	-6	-4	1
Eighth Tenth	-30	-8	...
Ninth Tenth	-50	-6	-2
Bottom Tenth	-40	-35	-16

Source : H. F. Lydall, British Income and Savings, Oxford, 1955, p. 14, Table 72 and 1951 Survey of Consumer Finances, Distribution of Consumer Saving," Federal Reserve Bulletin, September 1954, pp. 1961-78.

Sub-hypothesis (b), which is, in fact, founded on (a), rests on historical observation. Kravis states :

> Historically, indeed, it seems likely that savings necessary to finance the shift from pre-industrial to industrial economy were produced not only by rise in income but by differentiated rate of increase which had the effect of widening the degree of inequality in the distribution of income.[23]

No attempt had been made to quantify the relationship between income inequality and saving rates owing to lack of data. Of late, however, the pertinent statistical information is available for a few countries. We took a sample of nine countries and regressed personal savings on concentration ratios. The statistical results are presented in Table 5.[24] The results presented in the Table support the hypothesis that the behavior of personal saving is closely tied to degree of income inequality (as reflected by concentration ratios). The coefficient attached to the concentration ratio is significant at .01 level. The degree of correlation (.729) supports the hypothesized relationship between the two variables.

Considerable care needs to be exercised in interpreting these results. Owing to small sample size, the number of observations were increased wherever possible. Time series data were only available for four countries. To include more than one observation of four countries and only one for the rest, produces a weighting problem.[25] If there is a similar movement in saving rates and concentration ratios in the four countries with greater number of observations, it may dramatize or vitiate the actual relationship.

International comparisons of income distributions are subject to grave limitations. The data regarding income distribution will very depending upon the definition of the population unit,[26] the definition of income,[27] techniques of obtaining data,[28] strata of society covered,[29] the treatment of non-money income,[30] differences in tax evasion,[31] the treatment of capital gains and undistributed profits and fringe benefits,[32] measures of equality or inequality adpoted,[33] and differences in the definition of family.[34]

Table 5

Time Series Cross-section Analysis : Parameter Estimate of Saving

Dependent variable	Independent variable	Intercept	Regression coefficient	Std. error	N	r	R^2	F	D-Watson
s/y	Concentration	—7.07928	33.6625	9.12138	14	.7291	.531	13.620	2.589
	Ratio†	—7.07928	33.6625	9.12138	14	.7291	.531	13.620	2.589
		(−1.88346)	(3.69051)	*3.75865					

Figures in parenthesis indicate t values.

* Indicates standard error of estimate of intercept.

† Concentration Ratio is derived from the Lorenz Curve and measures the ratio of actual concentration to the area of the maximum possible concentration.

While these limitations and pitfalls belittle the importance of the statistical results, they by no means negate its significance.[35] To further affirm the statistical basis of the hypothesis, it may be fruitful to observe the distribution effects on saving rates via a sectoral analysis of the economy. It is hypothesized that since the distribution of income is more unequal in the urban sector than in the rural sector[36] any distribution of income in favour of the former vis-a-vis the latter will raise overall saving rates. The pertinent data presented in Table 6 lends support to the above hypothesis.

Ignoring the quality of data, it is evident (a) that the degree of income inequality is greater in the urban sector than in the rural sector, (b) although the concentration ratio is declined in rural sector between period I and period II, the *degree of* income inquality in the urban sector actually increased during the same period and (c) there is a parallel movement in the saving-income ratio and the concentration ratio.[87]

A sectoral analysis of India, therefore, supports the conclusion derived earlier regarding the linear influence of the concentration ratio on saving rates. However, the number of observations are too few to lend much conviction to the above conclusion. Besides it ignores the effect that relative shift of income in favor of the urban sector may have an overall saving rate. To catch the effect of relative shifts in the distribution of income between the urban and the rural sector, one can regress s/y on the terms of trade between the rural and urban sector as measured by the ratio of the non-agricultural income deflator to the agricultural deflator (Pyna/Pya). Since agriculture prices, owing to ratio of agricultural output to total output in an underdeveloped country, are the key to overall fluctuations in general price level, one may legitimately assert that a fall in agricultural prices vis-a-vis non-agricultural prices would turn the income distribution against rural sector and vice-versa. To test this, an attempt[88] was made to regress household savings in India on the terms of trade between the rural and the urban sector, in addition to current real

Table 6

Pattern of income Distribution in India :

Changes in Concentration Ratio Between Period I[a] and II

	Period I		Period II		Saving Income Ratio (Percentage)	
	Personal Income	Disposable Income	Personal Income	Disposable Income	Period I	Period II
Rural Household sector	0.305	0.304	0.304	0.301	2.6	2.6
Urban Household sector	0.378	0.368	0.421	0.405	12.5	19.5
All India (Household sector)	0.349	0.342	0.341	0.335	5.3	7.5

Source : 1. Period I refers to fiscal years 1953-54 and 1954-55 and Period II refers to fiscal years 1955-56 and 1956-57.

2. This refers to ratio of net saving to disposable income.

P. D. Ojha and V. V. Bhatt, "Pattern of Income Distribution in an Underdeveloped Economy : A Case Study of India", American Economic Review, Vol. LIV, (Sept. 1964), p. 714.

income and lagged saving. The results of the study are presented below :

$$\begin{array}{l} S=2071.8751+0.1066y_t \\ {}^{h,t}\quad(708.1101)\text{[39]}(0.379) \\ \quad+1129.9580\frac{P_{nva,t}}{P_{va,t}}+0.3909\ S_{h,t-1} \\ \quad(435.6537)\qquad\qquad(0.2169) \\ R^{-2}=0.806 \text{ and } dw=2.176 \end{array}$$

The results (as indicated by R^{-2} and low standard errors) do suggest that a shift in terms of trade in favor of urban sector would increase the aggregate saving.

(c) Whether the income distribution in the LDC's is more uneven than industrially advanced countries is largely a statistical question and facts alone can refute or confirm it. In this regard, Table 7 is quite revealing. The Table supports Kuznets[40] and Lewis[41] hypothesis that income distribution is more unequal in the LDC's than in the developed countries. In view of the difficulties and pitfalls involved in international comparisons of size of distribution, the above conclusion should, however, be accepted with a grain of salt.

Nevertheless, the statistical verification of sub-hypotheses (a), (b) and (c) does support the main hypothesis that any study of saving behavior which ignores personal distribution of income is likely to grossly underestimate the saving rates.

Table 7

International Comparisons of Size Distribution of Income

	Approximate Index of Real per Capita Product (US 100)	Date of Reference	Concentration Ratio
Denmark	49	1955	.23
Netherlands	39	1954	.28
Japan	10	1954	.31
Israel	25	1954	.29
U. S.	100	1951	.39
Great Britain	49	1951-52	.39
Canada	70	1951	.39
Italy	21	1948	.41
Puerto Rico	23	1953	.42
Ceylon	6	1952-53	.45
El Salvador	N/A	1951	.49

Source : I. B. Kravis, Structure of Income, p. 238.

Summary

It has been established that the correlation between saving rates and per capita income is weak and does not warrant the skepticism often expressed regarding the saving capacity of less developed countries in general and India in particular. As a matter of fact, the personal, functional and sectoral distributions of income in India are conductive to high saving rates. The results show that the marginal propensity to save out of property income far exceeds the wage income. The empirical evidence confirms the hypothesis that income inequalities and saving rates are closely related to each other. The finding is further confirmed by the rural-urban sector analysis of the Indian economy ; a shift in terms of trade in favour of urban sector (where income distribution is more unequal) has stimulating effect on overall saving rates.

References

*I am indebted to Alfred J. Fields, Jr., Dennis Appleyard, and Henry A. Lattane for numerous painstaking comments on an earlier version of this paper. They are, of course, in no way reponsible for the errors which may remain.

1. H. S. Houthakker, "On Some Determinants of Saving in Developed and Underdeveloped Countries," in ed., E. A. G. Robinson, 'Problems of Economic Development' (London : Macmillan Co., 1965), P. 123; L. R. Klein, "Saving Concepts and Data : The Needs of Economic Analysis and Policy," in ed., W. W. Heller, 'Savings in the Modern Economy' (Minneapolis : The University of Minnesota Press, 1953), P. 111 ; J. J. Williamson, "Personal Saving in Developing Nations : An Intertemporal Cross Section from Asia," 'Economic Record,' Vol. 44 (June 1968), P. 205; M. J. Ferrel, "The New Theories of Consumption Function," "Econmic Journal,' Vol. LXIX (1957) ; Simon Kuzents, "Quantitative Aspects of Economic Growth : Long Term Trends in Capital Formation Proportions," 'Economic Development and Cultural Change' Vol. IX (July 1961), PP. 7-8.
2. S. J. Patel, "The Distribution of National Income in India, 1949-51" 'Indian Economic Review', Vol. 111, No. 1 (Feb. 1956), P. 8 ; H. S. Huthakker, "An International Comparison of Personal Savings," Proceedings of 32nd Session of International Statistical Institute (1961), P. 57 ; Williamson, P. 201.
3. H. Leibenstein, 'Economic Backwardness and Economic Growth' (New York : Macmillan and Co., 1960).

4. W. A. Lewis, "Economic Development with Unlimited Supply of Labor," 'The Manchester School', Vol. 22 (May 1954), PP. 139-192.
5. Patel, P. 11.
6. United Nations, 'Economic Survey of Asia and Far East' (1961), P. 82; Simon Kuznets, "Quantitative Aspects of Economic Growth : Long-Term Trend in Capital Formation Proportions," Economic Development and Cultural Change, Vol. IX (July 1961), P. 7 ; Houthakker, P. 215.
7. For data sources, see Appendix.
8. Houthakker, "An International Comparison of Personal Savings."
9. Houthakker, P. 60.
10. Williamson, PP, 199-201.
11. Williamson, P. 201.
12. Williamson, P. 201.
13. Admittedly, the data are not reliable; however, their qualities are in no way inferior to that of similar information for other LDC's.
14. For data sources, see Appendix.
15. The explained variation (as indicated by R^2 is high, equation is singificant at .05 and .01 levels and t values for coefficient are significant at .05 level. It appears the property income contributes more to explanation than wage income. D-Watson test shows no auto-correlation at .05 and .01 levels and hence vindicates the assumption underlying the least square equation that Uj-individual error or disturbances are randomly distributed with finite means variance and co-variances. Lack of substantial improvement in results even with log transformation inticates lack of homoscedasticity.
16. Simon Kuznets, 'Modern Economic Growth' (London : New Haven Yale University Press, 1966), P. 176.
17. Patel, p. 11.
18. Kuznets, 'Modern Economic Growth' P. 423; Lewis, 'The Theory of Economic Growth,' PP. 420-423.
19. Patel and Lewis.
20. Houthakker, "An International Comparison of Expenditure Patterns," 'Econometrica,' XXV (1957), P. 540.
21. Of course drawing upon the average and marginal relationship one may logically infer that higher average propensity to save in upper income groups is the result of high marginal propensity to save.
22. J. M. Keynes, 'The General Theory of Employment, Interest and Money' (London : Macmillan and Co., 1957), P. 97.

23. B. Kravis, 'Structure of Income' (Pennsylvania : University of Pennsylvania, 1961), P. 160
24. For data sources, see Appendix.
25. For data sources, see Appendix.
26. Kuznets, 'Modern Economic Growth', PP. 424-425.
27. Kuznets, 'Shares of Upper Income Groups in Income and Saving', PP. 10-14.
28. Kravis, PP. 7-8.
29. Kuznets, "Quantitative Aspects of Economic Growth of Nations : Distribution of Income by Size," 'Economic Development and Cultural Charge,' II (Jan. 1963), PP. 2-10 and 58-67.
30. Kuznets, 'Levels and Variability of Rates of Economic Growth'.
31. Elios Gannege, "The Distribution of Income in Underdeveloped Countries," in J. Marchal. ed., 'Distribution of Income' (London . Macmillan Co., 1958).
32. Kravis, PP. 150-160.
33. J. S. Lansing and H. F. Lydall, "A Comparison of the Distribution of Personal Income and Wealth in U. S. and Great Britain," 'American Economic Review', (March 1959).
34. Kuznets, 'Modern Economic Growth, P. 424.
35. Some statistical verification of the hypothesis is better than none or unbridled speculation.
36. Kuznets, 'Modern Economic Growth,' P. 425.
37. The concentration ratio in the urban sector increased from 0.378 to 0.421 between the Period I and Period II ; during the same period, saving income ratio increased from 12.5 percent to 19.5 percent.
38. United Nations, 'Trade Prospects and Capital Needs of Developing Countries' (New York, 1960), P. 307.
39. Figures in parentheses indicate standared error of estimate.
40. Kuznets. 'Modern Economic Growth,' PP. 424-425.
41. Lewis, 'The Theory of Economic Growth'.

APPENDIX

I. The data on per capita income and saving rates have been drived from (1) Reserve Bank of India various Bulletins, and (2) National Council of Applied Economic Research, various Saving Surveys.

2. The data regarding movement of relative distributive shares (percent) in the Indian economy are obtained from papers on National Income and Allied Topics (New York : Asia Publishing House, 1971).

3. The data regarding concentration ratio, personal saving and personal income are obtaind from United Nations, National Accounts Statistics, various issues.

The Neo-classical Wage Equation : An Alternative Interpretation

D. A. Peel*

Lipsey (1960) presented a formal rationale for the observed relationship between the growth of money wages and the rate of unemployment—The Phillips Curve. Essentially the hypothesis of Lipsey is that :—

$$\Delta\frac{w}{w}=\frac{\lambda(D-S)}{S} \qquad \ldots(1)$$

and

$$\frac{D-S}{S}=g(u) \qquad \ldots(2)$$

where $\Delta\frac{w}{w}$ = the growth for money wages

D, S are respectively the demand and supply for labour

u = the unemployment rate.

In words, wage rise (fall) when the excess demand for labour is positive (negative) and the excess demand for labour is a stable function of the unemployment rate. Given the above assumption Archibald (1969) pointed out that ceteris paribus variables other, than unemployment which appear as explanatory variables in estimated wage equations such as the growth of retail prices are intruder variables.[1] He argued that the influence of retail prices should be picked up by the unemployment rate, the proxy for excess demand. In other words, the percentage changes in retail prices affect excess demand via shifts in labour supply and consequently unemployment changes.

---

* Department of Economics, University of Liverpool, Liverpool.

[1] Clearly, an exception to this is the percentage increase in the unemployment rate $\left(\frac{dU}{U}\right)$, a proxy for aggregation or alternatively excess demand [see Lipsey (1960) Archibald (1969) or Hines (1971)].

Hence to explain wage changes by both unemployment and percentage change in prices is to double count.

One difficulty with this interpretation is essentially empirical. In numerous studies a significant role for variables other than unemployment (notably growth of retail prices) has been found in the wage determination process. [e.g. Lipsey (1960), Lipsey and Parkin (1970)]. Hines (1971) attempted to give a theoretical rationale for this type of empirical result within the neo-classical framework. His model is presented below :

$$D=D(w/p,Y) \qquad \ldots(3)$$

$$S=S(w/p, Z) \qquad \ldots(4)$$

$$\Delta w/w-\Delta p/p=Z\left(\frac{D-S}{S}\right) \qquad \ldots(5)$$

where w/p is the real wage,

Y,Z are vectors of exogenous variables, the elements of which are parameters of shift of the demand and supply functions.

In other words the demand and supply functions for labour are in part functions of the real wage and further the adjustment mechanism is hypothesised to be in real terms. Hence, the growth of the real wage (more strictly the expected real wage) is a function of the excess demand for labour. From simple manipulation of (5) we can obtain the growth of money wages as a function of unemployment and growth of expected prices.

However, the analysis of Hines is incomplete. The real wage pertinent to the demander of labour is not the same as that pertinent to the supplier. Whereas the real wage to the demander of labour is the money wage divided by the product price, the real wage pertinent to the supplier of labour is the money wage divided by the retail price. (Both real wages suitably modified for taxes etc). The retail price need not be proportional to the product price, consequently there is a dilemma in the Hines treatment as to the choice of the price variable in the adjustment mechanism and how this choice is to be related to the theory.

Laidler (1971) Parkin, Sumner and Ward (P. S. W.) (1973) are aware of the above problem. S. P. W. have claimed a solution which is worthy of further study since it is claimed to be a generalised theory. The essential elements of their model are set out below, Excess demand (X) is defined as[1]

$$X = D\left(\frac{W(1+t_1)}{Pe}\right) - S\left(\frac{W(1-t_2)(1-t_3)}{Po(1+t_4)}\right) \qquad \ldots(6)$$

where W=money wage rate

P_e=price received by employers in domestic markets

P_o=price paid by consumers net of indirect taxes

t_1=effective rate of employer's social security contribution

t_2=effective rate of employee's social security contribution

t_3=effective rate of income tax

t_4=effective rate of indirect tax.

Hence the change in excess demand is obtained by totally differentiating (6) and is given by :

$$\Delta X = -\alpha(w' + T_1 - p'_e) - \beta(w' + T_2 + T_3 - p'_o - T_4) \qquad \ldots(7)$$

where

$$-\alpha = D^1 \mid \mid \frac{w(1+t_1)}{P_e} < 0$$

$$\beta = S^1 \mid \mid \frac{w(1-t_2)(1-t_3)}{P_o(1+t_4)} > 0$$

$$w' = \Delta w/w$$

$$p'_i = \Delta p_i/p_i$$

$$T' = \frac{\Delta(1 \pm t_1)}{(1 \pm t_1)}$$

It is further assumed that wages are adjusted so that the change in excess demand, given the anticipated behaviour of prices and tax rates, eliminates (all or part of) realised excess demand during some previous period, i.e.

$$\Delta X = -X_o \qquad \ldots(8)$$

P.S.W. combine this assumption with (7) and adding exceptional subscripts where appropriate and after some manipulation obtain the equation

$$\Delta w/w = \frac{1}{\alpha+\beta} X_o + \frac{\alpha}{\alpha+\beta} p'^{e}_{e} + \frac{\beta}{\alpha+\beta}(p'^{e}_{o} + T_4) - \frac{\alpha}{\alpha+\beta} T^{e}_{1} - \frac{\beta}{\alpha+\beta}(T^{e}_{2} + T^{e}_{3}) \qquad \ldots(9)$$

Equation (9) is essentially the P.S.W. hypothesis about the determinants of money wage changes. In the empirical work it is further assumed that the level of excess demand is some function of the unemployment rate. Though the P.S.W. model is superficially attractive since it seems to provide a fuller statement of the determinants of excess demand and further gives a joint role to both the expected rates of growth of retail and product prices[1] in the wage determination process, it seems incomplete in certain major respects. Though a fuller statement of the determinants of excess demand is provided (with the notable omission of output in the demand function) no *explicit* functional statement about the determinants of money wages per se is given. Their choice of money as the dependent variable when conditions (7) and (8) are solved is arbitrary. The level of excess demand (X) would more properly be the dependent variable in their analysis. Following their logic one could just as readily have taxes or prices as the dependent variable. Thus, P.S.W. have *not* provided a reconciliation of the earlier problem discussed in this paper but rather an interesting hypothesis about the determinants of and dynamic behaviour of excess demand.[2]

---

[1] This is the simplest formulation of Parkin, Sumner and Ward. They actually test a model where demand for labour is further disaggregated into domestic and foreign demand.

In the final part of this paper we suggest one avenue of approach which may provide a reconciliation of the problem outlined above.

We begin by assuming the adjustment mechanism outlined by Lipsey, thus :

$$\Delta W/W=\left(\frac{D-S}{S}\right)$$

Now, following Hines [1971] the unemployment rate is assumed to be the proxy for those levels of excess demand which are associated with the adjustmet of money wages to its equilibrium level as of given demand and supply functions for labour.

---

[1] In their empirical work, P. S. W. disaggregate labour demand into home and foreign demands and hence, the expected export price is also included in the retail and product prices.

[2] In fact, in principle the condition (8) could be solved directly for the time path of excess demand. In the simplest case we would obtain :

$$X_t=A_e^{-t}$$

where t=*a* time trend, e=the natural base, A an arbitrary constant.

It is also worth noting that P. S. W. proxy the difference between the demand and supply for labour by the unemployment rate. The formal link between X and the unemployment rate is not clear.

Hence, we have as our hypothesis about the determinants of money wages that :

$$\Delta\frac{W}{W}=f\,(U,Y,Z) \qquad \ldots(10)$$

where Y,Z are as defind earlier.

It should be noted that the demand and supply functions for labour are still assumed to be functions of the relevant real wage. This does not seem to preclude the assumption of an adjustment mechanism in money terms. [See, for example, the well-known early model of B. Hansen (1951)].

We now enumerate possible variables for inclusion in the vectors X and Y. In a recent paper, Lucas and Rapping (1970) have formulated a neo-classcal model of the labour supply decision of a representative household. The representative household is assumed to maximise its utility which includes future consumption and future labour supply as well as the current magnitudes of these variables. When this function is maximised subject to the constraint that the present value of ,consumption cannot exceed the present value of income it is shown that :

$$S=f\,(W/P,\ W^*/P^*,\ r_t,\ P^*/P,\ A) \qquad \ldots(11)$$

where W*, P* are the expected level of future wages and retail prices,

W,P are the current level of money wages and retail prices,

rt is the nominal interest rate at which the householder may lend or borrow.

A is the initital level of non-human assets.

The expected signs on the above arguments of the labour supply function are

$$\frac{\partial S}{\partial w/_p}>0 \quad \frac{\partial S}{\frac{\partial w^*}{p^*}}<0 \quad \frac{\partial S}{\partial p^*/_p}<0 \quad \frac{\partial S}{\partial r}>0 \quad \frac{\partial S}{\partial A}<0$$

And of the more interesting features of Lucas and Rapping's model is that the expected rate of inflation is an argument of the labour supply function as well as the rate of interest. Their model obviously provides us with some possible arguments of the Z vector.

In the vector X, perhaps a more important argument is simply the expected level of productivity.[1]

---

[1] In fact Peston (1971) suggests a more elaborate formulation including expected rate of increase of the product price but given a lack of formal derivation we stick to the simple formulation above.

We thus have as our simple hypothesis as to the determinants of the rate of money wage increases that :

$$w' = \Delta w/_{w} = f\,(u, I,\ w^{*}/_{p*},\ r,\ p^{*}/_{p},\ A)$$

where 1=productivity

and

$$\frac{\partial w'}{\partial u}<0 \quad \frac{\partial w'}{\partial l}>0 \quad \frac{\partial w'}{\partial w/_{p*}}>0 \quad \frac{\partial w'}{\partial r}<0 \quad \frac{\partial w'}{\partial p^{*}/_{p}}>0 \quad \frac{\partial w'}{\partial A}>0$$

Clearly, the above model is formally similar to those presented by other researchers. However, the parameter interpretation is different. In particular the coefficient on the expected rate of price increase is not required by the theory to be equal to one. Also worthy of note is a possible role for the interest rate in wage determination. The above type of model would seem to provide the reconciliation sought.

Though the major purpose of this paper is not empirical, a quick test of the above type of formulation on British Manufacturing data did provide some support for the hypothesis. Including a time trend, t, as proxy for assets, technical progress etc, we obtaine for a period 1956 (1)-1972(2) (bi-annual)

$$\begin{array}{l} \frac{W_t}{W_{t-1}} = \alpha_0 \underset{(-2.430)}{-0.0218\,U_t} \underset{(3.051)}{+0.0324\,D.U_t} \underset{(3.681)}{+0.7820}\,\frac{p_{t+1}}{p_t} \underset{(-0.310)}{-0.0444}\,\frac{w_{t+1}}{p_{t+1}} \\ \qquad \underset{(1.666)}{+0.1538\,l_{t+1}} \underset{(2.308)}{-0.0006\,r_{t+1}} \quad \underset{(-1.929)}{-0.002t} \quad \bar{R}^2=0.696 \quad DW=2.686 \end{array}$$

t values in parenthesis

W=weekly wage rates

r=the bank rate

where all variables except the interest rate (r) and the time trend (t) are in natural logarithms. The particular specification is suggested by the work of Lucas and Rapping [1970].

For simplicity it was assumed that expectations of all future price and wage levels, p* and W* referred to the next period and that actual and expected prices are equal. All data are from official Goverment sources and available on request. A slope intercept was included on unemployment for the period 1968-1972, since as is well known, unemployment ceased to bear the same relationship to excess demand around this period (see Gujarati (1972), Taylor (1972)). Since our major concern in this paper is not with the actual empirical proxy for excess demand per se the use of a slope variable seemed the simplest solution.

The reported regression does offer support for the hypothesis outlined. In particular, and interestingly, the rate of interest is significant at the 5% level of confidence with the correct sign whilst productivity is significant at the 10% level, Further experimentation with this type of model may prove worthwhile.

In conclusion, in this short paper it has been shown how the analysis of both Hines and P.S.W. is in some respect incomplete. An alternative statement of the determinants of money wages has been presented in which notably a role for both the expected consumer prices and the interest rate has been found.

References

1. Archibald, G.C. (1969) 'The Phillips Curve and the Distribution of Unemployment,' 'American Economic Review,' Papers and Proceedings.
2. Friedman, M. (1968) 'The Role of Monetary Policy', 'American Economic Review'.
3. Gujarati, J. (1972,) 'The behaviour of Unemployment and Unfilled Vacancies : Great Britain 1958-1971' 'Economic Journal.'
4. Hansen, B. 'A Study in the Theory of Inflation (Allen and Unwin, London, 1951.
5. Hines, A G. "The Determinants of the Rate of Change of Money Wage Rates and the Effectiveness of Incomes Policy" In the 'Current Inflation' ed. H.G. Johnson and A.R. Nobay-Macmillan 1971.
6. Laidler, D. (1971) "The Phillips Curve, Expectations and Incomes Policy" in 'The Current Inflation'.
7. Lipsey, R.G. (1060) "The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1862-1957, 'Economica'.
8. Lipsey R.G. and Parkin, M.J. (1969) "Incomes Policy : A Reappraisal", 'Economica'.
9. Lucas, R.E. (JR) and Rapping, L.A. "Real Wages, Employment and Inflation" in 'Microeconomic Foundations of Employment and Inflation Theroy' (E. Phelps et. al.) Macmillan 1970.
10. McCllum, B.T. [1974] "Wage Rate Changes and the Excess Demand for Labour. An alternative Formulation, 'Economica'
11. Parkin, M J. [1974] United Kingdom Inflation: the Policy Alternatives" National Westminster Bank. Qarterly Review.
12. Parkin, M.G. Sumner, M. and Ward, R. [1973] "The Effects of Excess Demand, Generalised Expectations and Wage-Price Controls on Wage Inflation in the U.K., University of Manchester Disc. Paper 7402, forthcoming in Brunner, Kard Melltzer, AH eds. Proceedings of the Conference on Wage-Price Controls at Rochester University.
13. Peston, M.H. [1971] "The Microeconomics of the Phillips Curve", in 'The Current Inflation.'
14. Taylor, J."Incomes Policy, the structure of unemployment and the Phillips curve; the United Kingdom experience, 1953-70" 'In Incomes Policy and Inflation, (Parkin, M. and Sumner, M.T. eds. Manchester University Press 1972.

Theories of Foreign Direct Investment : A Summary of Recent Research and a Proposed Unifying Paradigm

Raj Aggarwal*

Many different theories have been advanced to explain FDI. They sometimes lead to conflicting and inconsistent conclusions. This paper is an attempt to clear up some of the confusion in this area. The first half of this paper examines the various theories that have been developed in recent literature to explain the Foreign Direct Investment (FDI) process by Multi-National Companies (MNCs), and each of the proposed theories are summarized and explained. In the second half of the paper an overall framework based on the portfolio approach to investment in risky inter-related investments is proposed as the basis of a more comprehensive theory of FDI. In the concluding section of the paper the implications of the proposed theory of FDI for governmental policies towards FDI are developed.

INTRODUCTION

International investment is generally broken down into two categories, foreign direct investment (FDI) and foreign protfolio investment (FPI). FDI is considered to be the use of long-term capital flows and its local formation to acquire *control* of productive capablities by a foreign enterprise. The resources and factor imputs transferred to accomplish this may be an indivisible combination [33] of techonolgy, mangement skills, production processes, financial resources, and other factors scarce in the local economy. FDI represents one of the primary institutes by which MNC's implement their international strategy. FDI, on the other hand, is cosidered to involve the transfer of long and short-term capital funds undertaken without regarded to

---

* Associate Professor of Economics, The University of Toledo, U. S. A.

managerial control. It is usually undertaken by financial institutions for reasons of risk diversification [36,37] and yield rate differentials.

Importance of FDI

FDI, along with attempts to regulate, has been carried out for centuries, and one of the first MNC's (the British East India Trading Company) was also the first corporation with the feature of limited liability for the owners [29,46]. During the post-World War II period FDI has shifted from primary to secondary level production activities, increasingly has taken place among industrialized nations and, above all, has grown considerably at ten per cent per year while world trade and real GNP grew only at seven per cent and four to five percent annually, respectively [10,40,41]. Consequently FDI has become a matter of increasing concern for nations, labour unions, and MNCs.

Many different theories have been advanced to explain FDI. They sometimes lead to conflicting and inconsistent conclusions. This paper is an attempt to clear up some of the confusions in this area. The first half of this paper examines the various theories that have been developed in recent literature to explain the Foreign Direct Investment (FDI) process by multinational companies (MNCs). Each of the proposed theories are summarized and explained. In the second half of the paper an overall framework based on the portfolio approach to investment in risky inter-related investments is proposed as the basis of a more comprehensive theory of FDI.

In addition to the lack of consistent, reliable and detailed data the lack of an accepted theory of FDI has also hampered empirical work in this area. The conflicting theories of FDI lead researchers to ask different questions and to develop and test many overlapping, competing, and some conflicting hypotheses. Empirical results or "answers" are in no small way shaped by the initial questions asked [1].

A more comprehensive theory for explaining and understanding FDI can be useful not only for economists concerned with the economic influence of MNCs but can also be a useful guide in developing international institutions for the regulation and encouragement of FDI by MNCs, and to develop optimal policies towards FDI by individual nations and by the corporative regional groups of countries such as the European Economic Community and the Andean group. In the concluding section of the paper the implications of the proposed theory of FDI for governmental policies towards FDI are developed.

EXISTING THEORIES OF FDI

While FDI may initially be undertaken to overcome restrictions to international trade, such as, tariffs, quotas, and other discriminatory taxes and other governmental policies, a theory of FDI must be able to explain the volume and direction of FDI. The following are some theories that have been publised in recent literature.

(1) The Classical Theory : Interest Rate Differences

This theory propounded by Ricardo, Hume, Mill, Iverson, and others [18] asserted that interest rate difference between countries is the cause of international capital movements. In this way, it treated capital just like any other commodity and its price, the interest rate, thus governed its supply, demand, and allocation. At the level of the firm, international investment, just like domestic investment, is a function of the relationship between return on investment adjusted for risk differences and the cost of investible funds. The existence of efficient and free international capital markets greatly facilitates the free movement of such capital flows, while any imperfections such as restrictions on overseas investment would impede or distort such flows.

This classical theory, however, does not explain very well the role of MNCs since it limits itself to explaining how and where firms decide to obtain the capital needed to finance their global plans, but does not say anything about its investment for the purpose of managerial control of production capabilities. Its role in modern times is, then, limited primarily to explaining FPI rather then FDI.

(2) The Monopolistic Advantage Theory

This theory contends that the existence of imperfections in the markets for factors of production such as capital. technology and labor, result in an imperfection in the market for a firm's product, i.e., it gives the foregin investor a monopolistic advantage (other than just access to cheap capital markets). This theory was first propounded by Stephen Hymer and later extended by Charles Kindleberger [17,19]. The monopolistic advantage, usually unique technological or managerial skills, possessed by the MNC is generally developed for home use and can be applied abroad by the MNC without too much modification to more than overcome the dual disadvantage of being a foreigner and the additional costs associated with the geographical distance. It should, however, be noted that this advantage can be used to expand abroad in at least three ways : exporting, licensing, or foreign investment.

Sometimes one or more of the other ways may be used before the MNC finally decides to invest abroad.

(3) Market Structure and Protection of Markets

MNCs that engage in FDI are characterized by their large size and by high expenditures for new product development, and advertising [14]. Local marketing is characterized by product differentiation and is greatly aided by local production in such cases. Industries that manufacture abroad, thus, are characterized not only by a high degree of product differentiation, but also by a few mutually inter-dependent firms in an oligopolistic relationship [16,19,20]. In such a case, when the time comes that the local markets have been fully exploited, each firm recognizes that if one firm goes aboard, that leader will dominate the market and its profits may rise to an above average level, giving it unique financing advantages. Besides, some of these other firms in the industry that do not produce abroad are likely to lose their export markets. Thus, FDI may be defensive in nature and may take place as a result of the 'bandwagon' effect.

(4) The Product Life Cycle Theory

The global diffusion of technology through new product development and evolution has been used to explain FDI by this new, dynamic theory. The international involvement of the MNC is viewed as following sequential stages in the life cycle of the product or process it develops. Because of the restrictions in the flow of information across national boundaries and the evolution of demand for high-income consumer goods and labor-saving producer goods, innovation of new products is more likely to occur in developed, highly industrialized nations [42], and these innovations are likely to be used in less developed nations later as they emerge to have similar economies [42, 43] in the years to come.

Initially, new products are typically produced in the nations where they were developed and costs of production are not a major factor at this introductory stage ; and the product design is finalized to best suit home market needs. The monopoly advantage of the innovator is reinforced by a high degree of product differentiation. In the second maturation stage of the product life cycle, specifications become standardized and economies of scale become important.

In the third stage, the local market may become saturated and excess production may have to be sold in other countries. At the same time because of reduced technological barriers to entry the market become competitive and reduced production costs become very important. In such a case production may have to shift internationally to the lowest cost location. FDI may take place at any stage of the product life cycle, but as we see above, the reasons for it may be different at different stages of the new products' evolution. In addition, the innovator may be able to extend this monopolistic advantage for a greater•period by introducing the product successively in developed or industrialized countries.

(5) The Currency Preference Theory

This theory, developed by Aliber [3.4], suggests that the main advantage enjoyed by a foreign investor is the additional confidence that investors have in securities denominated in selected strong and stable currencies, i.e., investors prefer to hold assets in currencies that are not exposed to the risk of exchange rate changes. Thus, an MNC with a strong and preferred parent country currency will have a lower cost of capital because of the lower exchange rate risk. A secondary reason for investors to prefer assets in a particular currency may be a result of the greater efficiency of the capital markets in that country [30].

(6) FDI As an Outcome of Organizational Behavior

As Galbraith argues [11], once the corporation has satisfied its profit goal, the organizational goal becomes that of growth. As local markets and growth are limited by fear of antitrust and other regulations, the firm may have to expand abroad to fulfil its goal of growth in order to maintain its market value and financing opportunites. The existence of an international divison or an internationally minded executive may also serve to motivate the MNC to expand its FDI [2,31].

(7) FDI As Modern Imperialism

Besids the traditional Marxist-Leninist theories that see imperialism as a necessary outgrowth of capitalism [22,26]. FDI has been looked upon as a means for the advanced, industrialized nations to extend their imperialistic control over others, weaker nations [47]. As such, MNC's are seen as the partners or agents of parent country governments. International control is sought to insure sources of supply of raw materials and to insure captive market for produced goods. In addition, FDI may be used to foster and perpetuate international division of labour and politico-economic dependence [39]. A milder form of this view asserts that because of the natural identity of interests between the MNC and the home government and the interest of the MNC to have freedom of movement, these home governments may prefer to create and preserve an open, integrated international economic system [28].

Limitations of the Theories of FDI

There are, thus, many theories of international investment, and in a particular case all or most of the above may apply to differing degrees. While it is safe to say that no one reason summarized above can adequately explain the extent and size of modern international investment, it is usually a matter of controversy and generally not possible to determine which reasons are sufficient or even most important in particular cases.

In addition, none of the currently proposed theories of FDI can adequately account for the increasingly important phenomenon of international divestment by MNCs. As recent studies [6,44, 32] concluded most MNCs are not well prepared to deal with divestment. An improved theory of FDI should contribute to a better understanding of this nagative FDI.

Existing theories of FDI may be classified into two categories, i.e., those that emphasize environmental factors versus those that emphasize organizational factors. The first five theories summarized above may be placed in the former category while the last two theories of FDI summarized in the previous section can be placed in the latter category. Most empirical tests of theories of FDI have also emphasized either environmental factors or organizational factors in selecting the independent variables [12].

However, FDI is one of the outcomes of the interaction between the environment and the organization. Consequently, theories of FDI that fail to emphasize either organizational or environmental factors would be limited as to their explanatory powers. As has been pointed out in case of studies of domestic investment behavior [8] econometric studies of FDI suffer from incomplete and positively faulty specification of critical relations. A persistent limitation of most econometric studies of FDI has been the absence of organization-specific variables in the models tested. The model for FDI by MNCs proposed below is an attempt to overcome these limitations.

THE PURPOSIVE GOAL-DIRECTED NATURE OF FDI

The MNC is a Purposive Goal-directed Organization. Consequently, it not only adapts to the environment but, in addition, may also try to change its environment in such ways as may best serve its goals and purposes. Thus, FDI is an attempt by the MNC to not only adapt to its environment as some of the theories emphasizing the environmental variables suggest, but in addition, may also be an attempt to influence its environment. The purposes and goals of a MNC can usually be considered to be survival, profitability, and growth (in that order). In the presence of a sophisticated, well-informed, and efficient market for an MNC's shares, these goals can be summarized by the goal of maximizing the economic value of the MNC.

The economic value of an MNC (or any other asset) can be considered to depend on the expected value of the earnings stream generated by MNC and its riskiness. If we assume MNC owners to be rational and having positive association between the size of the expected income stream and a decreasing marginal utility of money (risk aversion) FDI will be undertaken by an MNC in order to maximize its value because it

a) reduces the overall riskiness of the expected earning stream from its global set of investments
b) increases the level of the expected income stream
c) changes the overall combination of risk and return from its worldwide operations to a more appropriate combination that maximizes the value of the MNC.

The Portfolio Effect

Portfolio theory has been well developed for investments in capital market instruments[9,24,35] including the case of FPI[13,23,27,35]. The major results of this theory that are of interest to us is that (a) the expected return from a portfolio of investments is the weighted average of the expected returns from each investment in the portfolio and, (b) the riskiness of the return from the portfolio of investments is less than the riskiness of the returns from each of the investments in the portfolio if any of them is less than perfectly correlated with each other.

In the case of a finite number of investments mathematical relationships defining the portfolio risk have been developed in terms of the standard deviations of the expected returns for each of the investments in the portfolio and the matrix of covariances among these expected returns[36]. In case the returns from each investment can be correlated to a common "market index" the calculations are considerably reduced in complexity and the risk associated with each investment can be subdivided into a systematic component that depends on the "market as a whole" and cannot be diversified away by forming portfolios and an unsystematic risk component that can be neutralizad by combining it in an appropriate portfolio.

Since the riskiness of a portfolio of assets or investments is not an arithmetic average of the riskiness of each of the individual investments but depends on the matrix of covariances of returns it is very important that the measure of risk attached to a particular investment when evaluating it for a particular MNC must be based on how that investment changes the riskiness of the resulting portfolio. Measures of risk such as standard diviation as applied to an investment by itself may be misleading in such cases. Various possible combinations or portfolios of investments should be evaluated in groups and the optimum combination or portfolio that maximizes the value of the MNC should be selected. This is usually done by calculating the point where the curve representing the efficient frontier of investments touches the highest indifference curve representing the utility function of the owners of the MNC.

The Portfolio Theory View of FDI

Risk reduction using portfolio diversification depends on combining investments whose returns are influenced by different environmental forces. In other words, the covariance between returns should be less than perfectly positive. Maximum risk reduction takes place when returns are perfectly negatively correlated. In general, an MNC is more likely to encounter such opportunities than a comparable domestic firm.

Some recent work has pointed out that in an economy with well-developed and efficient financial markets, investors are better off if management does not attempt to diversify, and any diversification is best done by individual investors. For an MNC considering FDI the situation is, however, likely to be very much different. Among other reasons, international markets are less well developed, there is some evidence of a lack of free international movement of capital, and investors are less likely to have knowledge about opportunities for international diversification. Therefore, risk reduction using portfolio diversification of investments is perhaps a more important factor for MNCs than for comparable domestic firms. FDI is, thus, an acceptable and important way for an MNC to maximize its value by reducing its riskiness by diversifying its portfolio of investments.

One of the major implications of applying portfolio theory to understanding FDI is that the measure of the riskiness of an investment that is relevant is the extent to which the addition of the MNC changes the overall riskiness of the MNC. The actual riskiness of the investment by itself may be irrelevant because of the portfolio considerations.

In case a concept of a "market index" can be developed for the portfolio of the MNC's investments, the relevant risk for project evaluation purposes may be all of the systematic portion of the total risk and some portion of the unsystematic risk. This portion of the unsystematic risk would depend on how the cash flows from the proposed investment are correlated to the existing cash flows of the MNC. In case, however, it is difficult or impossible to meaningfully separate the two components of project risk then each project must be evaluated in terms of how the addition of its expected cash flows will alter the overall riskiness of the MNC.

FDI, therefore, is a result of the actions of a purposive, goal-directed organization engaged in maximizing the overall economic value of the earning stream generated by its global investments. These actions would include both adaptation to the environment as some theories of FDI emphasize (see above), and attempts to change the operating environment as some other theories of FDI suggest. Thus, if FDI is seen as an attempt by MNCs to maximize the long-run economic value of the overall portfolio of their global investments we can see why most theories of FDI suffer from a lack of complete specification, and why most of the conflict is evidently only apparent. There seems to be a conflict when theories of FDI are viewed along only one of either the return or the risk dimension. When the trade-off between return and portfolio risk is taken into account most of this apparent conflicts disappear.

As an example, we see that the classical theory emphasizing interest rate differences can be seen as one of the ways in which the MNC can increase the expected returns from its operations. The second theory of FDI emphasizing monopolistic advantages can also be seen as another process that enables an MNC to increasing the expected returns from global operations. The third theory emphasizing the defensive actions of protection of markets by MNC can be seen mainly as an attempt by the MNC to reduce the riskiness of the returns from its global operations. The fourth theory based on the product life cycle concept includes both risk reducing aspects (introducing new products that have already been tested elsewhere), and cost reducing or return increasing aspects (it is cheaper to introduce a product developed for and tested in another market). Because of the time lag between introducing a product in different markets such a strategy would also be one that is likely to be risk-reducing for future earnings. The next theory of FDI, the currency preference theory evidently is based on the fact that investments in lower risk currencies require a lower rate of return. FDI as an outcome of organizational behavior also emphasized primarily the risk reduction route to maximize the value of an MNC. The explanation of FDI as an aspect of modern imperialism can be said to be based mostly on the motive of an MNC to increase its profitability.

In summary then, most theories of FDI can be seen as different combinations of ways in which the MNC can maximize its economic value. Consequently, it may be fair to say that existing theories of FDI are basically subsets of the explanation of FDI as an outcome of the process by which an MNC maximizes the long-run economic value of the portfolio of its investments. This process includes action directed towards adaptation to the environment, as well as, purposive actions directed towards either changing the environment or moving to a more favorable environment. Therefore, a more complete explanation of FDI would involve not only the role of environmental (economic, political, etc) factors but also the purposive and internal-to-the-MNC factors such as managerial marketing, financial and personnel policies.

Some Implications of the Portfolio Approach to FDI

(a) *For MNCs*

A foreign investment that may have been good at one time for an MNC may not actually turn out to be so at a later date not only if the actual cash flows fall short of what was expected but also if the portfolio risk of the investment is now more than what was estimated when it was undertaken. Therefore, divestment decisions should include an analysis of how the changed environment is likely to influence the covariance of cash flows matrix.

The evaluation of foreign investment should include post-audit procedures that provides information useful for improving future estimates of cash flows and their correlation matrix. In addition, the contribution of a foreign investment should be analyzed not only in terms of how much it contributes to the profitability of the MNC but also in terms of how it contributes to the stability of these earnings. Unfortunately, published evidence indicates that this second factor is usually ignored in comparison to the attention given to FDI and other measures of profitability.

Risk reduction goals would indicate that MNCs should carefully consider FDI in countries whose economies are not closely tied to the home country economy. For U.S. MNCs this would be a reason to require a somewhat lower rate of return from FDI in east European, Asian, or other socialist countries. This advantage of such FDI in contributing to greater stability of MNC earnings may, however, be offset by the higher level of other difficulties faced in such countries. Current practice in U.S. MNCs would seem to be somewhat wrong if a high risk-premium is demanded for FDI in such areas. The portfolio approach would suggest a low or even a negative risk premia. The same can be said about FDI in less developed countries.

(*b*) *For Nations*

National policies towards FDI should be clearly spelled out and if possible should not change very often. A stable policy will reduce the risk faced by MNCs for FDI in that country even if the policy is judged to be somewhat harsh by them. In addition, such policy should be based on encouraging investment in areas and industry that emphasize mutually beneficial self-interest [7, 46] not only in the areas of greater profits but also greater contribution to stability of MNC earnings. National policies towards FDI should be formulated to encourage the evaluation of each proposal for FDI for the extent of matching interests between the nation and the MNC in both of the above areas.

(*c*) *For Empirical Studies of FDI*

Empirical studies of FDI have mainly emphasized the return aspect of FDI and have quite often ignored the risk reduction aspect of FDI. Kwack [21], Scaperlanda and Mauer [34], and Bandera and White [5] found strong correlations between the size and growth of foreign markets and U.S. FDI. In addition, Kwack [21], and Herring and Willet [15] found a strong positive correlation of FDI with internal MNC factors i.e,, cash flow of the U.S. corporate sector and fixed investment expenditures in the U.S. respectively. All of these studies support the somewhat obvious result that the level of U.S. is positively correlated to expected returns from FDI.

What would be more interesting and useful are empirical studies testing the relationship between the level of FDI and risk factors such as measures of economic and political stability, degree of correlation of U.S. (home country) economic conditions and foreign (host country) economic conditions. Our theory of FDI would lead us to expect a positive correlation between economic and political stability and the level of FDI and a negative correlation between the level of FDI and how closely the host country's economic changes parallel the home country's economic changes.

A related empirical study would be to see if there is any correlation between the stability of an MNC's earnings and the weighted average of the number of economic areas in which it operates.

Conclusions

This paper explained and summarized the many different theories of FDI that have been developed in the past few years. In view of their competing and often conflicting claims to completeness and ability to explain FDI there has been no one widely accepted theory of FDI. The portfolio approach as applied to FDI was proposed in this paper as a unifying concept that resolved some apparent contradictions in the theories examined. The paper concluded by exploring some implications of this unifying concept both for MNC operations and for identifying fruitful areas for further empirical research regarding FDI.

References

1. Agarwal, Raj "Determinants of Currency Devaluations and Revaluations : Comment, presented at the Seventh Annual Conference of the American Institute for Decision Sciences, Cincinnati, Ohio, November, 5-7, 1975.

---

* According to the 'market index' version of portfolio theory we have :

$$R_j = R_F + (R - R_F) \left[\frac{Cov(R_j, R)}{Var(R)}\right]$$

where

R_j=Required rate of return on risky project j
R_F =Rate of return on risk-free asset
R=Initial portfolio rate of return

2. Aharoni, Yair, 'The Foreign Investment Decision Process (Boston : School of Business Administration, Harvard University, 1966).
3. Aliber, Robert Z., 'The Internal Money Game' New York : Basic Books. 1973).
4. Aliber, Robert Z., "The Multinational Enterprise in a Multiple Currency World," in Running John H. (ed.) 'The Multinational Enterprise' (New York : Praeger, 1971), pp. 49-56.
5. Bandera, V. and White, J., "U.S. Direct Investment and Domestic Markets in Europe," 'Economica International 21 (1968).
6. Boddewyn, J.J. and Tornedon, R.L. "U.S. Foreign Divestment : A Preliminary Survey" 'Columba Journal of World Business,' Summer 1975, PP. 25-29.
7. Business Week "Multinationals Find the Going Rougher" 'Business Week (July 14, 1975) : 64-69.
8. Eisner, Robert "Comment : Colloquim on Econometric Studies of Investment Behaviour," 'Journal of Economic Literature' Vol. 12, no. 1 (March 1974). P. 50.
9. Francis, JackC, and Stephen M. Archer 'Protfolio Analysis', (Englewood Cliffs, New Jersey : Prentice Hall, 1971).
10. Freidlin, J.N. and L.A. Lupo, "U.S. Direct Investment Abroad in 1973," 'Survey of Current Business', 54, no. 8 (August, 1974) PP. 10-24.
11. Galbraith, John Kenneth, 'The New Industrial States' (Boston, Houghton-Mifflin Company, 1967), PP. 171-178-
12. Green, Robert and Cunningham, William "The Determinants of U.S. Foreign Investment : An Empirical Examination", Management ; International Review 15, no 2-3 (1975), PP. 113-120.
13. Grubel, Herbert G "Internationally Diversified Portfolios" 'American Economic Review' (Decemher 1968).
14. Grubel, William H. Dileep Mehta, and Raymond Vernon, "The R&D Factor in International Trade and International Investment of United States Industries," 'Journal of Political Economy' 75 (February, 1967), 92. 29-37.
15. Herring, R and Willett, T., "The Capital Control Program and U.S. Investment Activity Abroad," 'Southern Economic Journal (July 1972).
16. Horst, Thomas, "Firm and Industry Determinants of the Decision to Invest Abroad : an Empirical Study," 'Review of Economics and Statistics,' 54, (Agust, 1972), PP. 266-85.
17. Hymer, Stephen H., "The International Operations of National

Firms : A Study of Direct Investment, "Unpublished Doctoral Dissertation, MIT, Cambridge, Mass. 1960.

18. Inverson, Carl, 'Aspects of the Theory of International Capital Movements (London : Oxford University Press, 1953).
19. Kindelberger, Charles P. (ed.) 'The International Corporation' (Cambridge, Mass. The MIT Press, 1970).
20. Knicherbocker, Frederick T., 'Oligopolistic Reaction and Multinational Enterprise (Boston, Division of Research, School of Business Administration, Harvard University, 1973).
21. Kwack, S. "A Model of U. S. Direct Investment Abroad," 'Western Economic Journal' (1974).
22. Lenin, V. I., 'Imperialism : The Highest Stage of Capitalism' (New York : International Publishers, 1939).
23. Levy, Haim, and Sarnat, Marshall "International Diversification of Investment Portfolios," 'American Economic Review', (September, 1970) : 675-688.
24. Lintner, J. "The Valuation of Risky Assets and Selection of Risky Investments in Stock Portfolios and Capital Budgets," 'Review of Economics and Statistics' 47 (1965).
25. Lombard, Francois "La Theorie Des Investissements Directs : Examen Crique A La Lumiere Des Flux D' Investissements Europeans Aux Etats-Unis," 'Management International Review' 15 (issue 4-5, 1975) ; 35-47.
26. Magdoff, Harry, 'The Age of Imperialism : The Economics of U. S. Foreign Policy' (New York : The Monthly Review Press, 1969).
27. Miller, N. C. and Whitman, Marima V. N. "A Mean-Variance Analysis of U. S. Long-Term Portfolio Foreign Investment," 'Quarterly Journal of Economics' (May 1970) : 175-196.
28. Moran, T. H. "Foreign Expansionas an Institutional Necessity for U. S. Corporate Capitalism : The Search for a Radical Model," 'World Politics', 25 (April 1973), pp. 369-386.
29. Phatak, Arvind V. 'Evolution of the World Enterprise' (New York ; American Management Association, 1971).
30. Ragazzi, Giorgio, "Theories of the Determinants of Foreign Direct Investment," 'IMF Staff Papers', 20 (July, 1973), pp. 471-498.
31. Richardson. J. David, "On Going Abroad : The Firms Initial Foreign Investment Decision," 'Quarterly Review of Economics and Statistics', 11 (Winter, 1971), pp. 7-22.
32. Sachdev, Jagdish C. "Disinvestment : A Corporate Failure or a Strategic Success" a paper presented at the Academy of International Business Meetings, Fontainbleau, France, July 1975.

33. Safarian, A. E., "Perspectives on Foreign Direct Investment from the viewpoint of the Capital Receiving Country," 'The Journal of Finance' 28, no. 2 (May, 1973), pp. 425-452.
34. Scaperlanda, A. and Mauer, L. "The Determinants of U. S. Direct Investments in the AEC," 'American Economic Review (September 1969).
35. Sharpe, W. "Capital Asset Prices : A Theory of Market Equilibrium Under Conditions or Risk" 'Journal of Finance' 19 (1964).
36. Solnik, Bruno "Why not Diversify Internationally Rather than Domestically," 'Financial Analysts Journal' (July-August, 1974),
37. Solnik, Bruno H., "The International Pricing of Risk : An Empirical Investigation of the World Capital Market Structure," 'Journal of Finance' 29, no. 2.
38. Stevens, G. V. G. "Fixed Investment Expenditures of Foreign Manufacturing Affiliates of U. S. Firms : Theoretical Models and Empirical Evidence," 'Yale Economic Essays' (Spring 1969) : 136-193.
39. Sunkel, Osvaldo, "Big Business and 'Dependencia' : a Latin-American View, 'Foreign Affairs', 50 (Apail, 1972), pp. 517-531.
40. UN, Department of Economic and Social Affairs, 'Multinational Corporations in World Development' (New York : United Nations, 1973, Document ST/ECA/190).
41. U. S. Congress, Hearings before the Subcommittee on International Trade, Committee on Finance, United States Senate, 93rd Congress, First Session, 'Multinational Corporations' (Washington, D. C. : U. S. Government Printing Office, 1973), Stock no. 5270-01781.
42. Vernon, Raymond, "International Investment and International Trade in the Product Cycle," 'Quarterly Journal of Economics', 80, (May, 1966), pp. 190-207.
43. Wells, Louis T. Jr., (ed.) 'The Product Life Cycle and International Trade' (Boston : School of Business Administration, Harvard University, 1972).
44. Widing, Jr. J. W. "Reorganizing your World-Wide Business", Harvard Business Review, May-June 1973, pp. 153-155.
45. Wilson, F. Perry, "The Highest Self Interest" 'Newsweek' (November 23, 1975) : 23
46. Wilkins, Mira, 'The Emergence of the Multinational Enterprise' (Cambridge, Mass. : Harvard University Press, 1970).
47. Wolff, Richard D. "Modern Imperialism : The View from the Metropolis," 'American Economic Review', 60 (May, 1970), pp. 225-230.

Poverty in International Perspective

K. J. Charles*

Section I : Introduction

The economic distance between nations has attracted a great deal of international attention, and we have become accustomed to a paradigm of the world characterized by a great divide between the rich nations and the poor nations. The peoples of the rich nations command a high standard of living in an incredibly comfortable environment made possible by modern science and technolygy while the masses of the poor countries, popularly known as the Third World, lead a primitive existence, unable to afford even the basic amenities of life. This is a valid model of the world, and is indispensable to a proper understanding of the very serious problem of bringing about rapid economic development in the developing nations of the world. While useful such a conception of the world is also misleading, and may actually make the solution to the problem of poverty more difficult. Significant minorities in the poor countries are quite rich even by Western standards, and are able to afford luxurious and lavish styles of living. On the other hand, several empirical studies have established beyond doubt that considerable proportions of the peoples of the rich countries are poor. This paper advances the hypothesis that our understanding of the problems of poverty in an international perspective—that the poverty in the developed countries and the problems of bridging the gap between the rich countries are not two separate problems, but are inter-related aspects of the problem of world poverty.

Section II outlines the empirical evidence on the question of the gap between the rich countries and the poor countries. Section III examines the reasons for this widening gap ; Section IV focuses attention on the debit side of affluence and the problem of poverty in the rich nations ; Section V examines the traditional explantions given

---

* Professor of Economics, Lakehead University, Ontario, Canada.

by the economists of both the phenomenon of the gap between rich nations and poor nations and that of poverty and riches within nations, and a concluding section suggests a unified approach.

Section II : The Empirical Evidence

Prior to 1750 the civilized nations of the world could not be easily divided into 'rich' and 'poor' nations, though undoubtedly within nations an economic gap existed between the rich and the poor. As the industrial revolution gathered momentum in the European countries, their national incomes began to rise rapidly, and the gap between them and the countries of Asia, Latin America and Africa became perceptible. With the passage of time, this gap between the rich nations and the poor nations grew ever more rapidly, and to this day there are no signs of any abatement of this tendency. As shown in Table I, in 1850, the per capita income of the rich countries was probably around $ 150 and of the poor countries around $ 100. In the period 1951-1955, the annual average per capita income of the rich countries was $ 1542 while that of the poor countries was $ 164. Thus a negligible gap of $ 50 between the two worlds widened into a gap of $ 1378 within the space of a century. In relative terms, the per capita income of the rich countries which was 1.5 times that of the poor countries in 1850, had grown to 9.4 times. By 1971 the average per capita income of the rich countries had risen to $ 2798 while the average per capita income of the poor stood at $ 250. Thus the absolute gap between the two groups of countries had widened to $ 2548, and the relative gap was now 11.1. By the year 2000, the absolute gap between the rich countries and the poor countries is expected to exceed $ 5,600, making the per capita income of the rich countries 14.8 times that of the poor countries.

Table 1

Per Capita Income of Rich and Poor Countries

Year	Poor Countries (1)	Rich Countries (2)	Absolute Gap (3)=(2)−(1)	Relative Gap (4)=(2)/(1)
1850	$ 100	$ 150	$ 50	1.5
1961-1955 (Annual average)	$ 164	$ 1,542	$ 1,378	9.4
1971	$ 259	$ 2,798	$ 2,548	11.1
2000	$ 406	$ 6,013	$ 5,607	14.8

It is obvious, therefore, that under present circumstances attempts on the part of the poor countries to catch up with the rich countries are doomed to be exercises in futility. Empirical evidence makes it compellingly clear that the traditional approach to this problem is seriously inadequate, and that there is an urgent need to make a fundamentally new approach.

Section III : The Reasons for the Widening Gap

While the gap between the rich word and the poor world is actually widening, in the rich world itself the gap between the richest developed nation, the United States and the other developed countries has been narrowing, in times of per capita income, and same countries like Switzerland and Sweden, have actually surpased the United States in this regard. Why are the poor countries, then, unable to catch up with the rich countries ?

The developed countries of the world today are and were capitalistic, and enjoyed certain historical advantages in the crucial period of their development, which in the changed world of today are not available to the poor countries. (i) During the period of rapid development of the capitalistic countries of Western Europe and North America, they had a large 'non-capitalistic environment' to colonize and exploit. Britain and the European powers had colonies from which they drew the raw materials they needed for their development, and which provided a captive market for the sale of their finished products. From the colonies they also took slaves and indented labour to work on their farms and plantations.[1] This facility is not available to the 'late-comers'. (2) The capitalistic class in the rich countries was a revolutionary class, that wrested power from the feudal class, and ushered in a period of breath-taking technological advance. In the poor countries of today, the capitalistic class is unable to play that radical role, since it can no longer act as an autonomous force in view of the highly integrated nature of the world capitalistic system. Large multinational corporations that dominate the world capitalistic system are far richer and more powerful than many of the poor countries. Under these circumstances, the capitalistic class in the poor countries becomes subordinate to the capitalists of the developed countries through the growing penetration of foreign capital into the poor countries, and the dependence of the poor countries on the rich is further buttressed through foreign aid, trade arrangements, and military alliances. As a consequence the capitalistic class in the poor countries has not been able to play the aggressively radical role which it once did in history. (3) In the developed countries of today, population began to increase after development had gathered steam and therefore increasing population facilitated development by providing both labour and effective demand that the development required. In the poor countries of today, however, thanks to the benefits of modern medicine sharply reduced death rates have resulted in rapid growth of population even before self-sustaining development could be initiated. Consequently, their high population advance acts as a powerful brake on development. (4) In the developed countries, rapid development required labour-saving technology and much of the resulting inventions have been of this kind. In the poor countries of today, however, there is usually a super-abundance of labour, and the use of labour-intensive technology aggravates and generates problems of unemployment and under-employment. (5) In the developed countries of today, a high rate of saving was facilitated by the frugality of the rich, and the suppression of the poor. In the poor countries of today, the 'demonstration effects' emanating from the rich countries have resulted in both the capitalistic class and the labouring class aspiring for high levels of consumption, drastically curtailing the availability of savings for development.

For all these reasons, the poor countries of the world today cannot hope to bridge the yawning gulf between them and the rich countries. Actually this is not such an unmitigated tragedy as it may seem at first blush.

Section IV : The Debit Side of Affluence

While the rich nations have been reaching fabulously high levels of per capita income, there is no indication that this increase of wealth has been accompanied by an increase of happiness or welfare in these societies. Ancient philosophers in the East and the West had long ago warned us that increase of wealth is no guarantee of happiness. Their teachings on the subject can be succinctly summed up in the formula :

$$H=\frac{Y}{W\times P}$$

where H stands for happiness, Y for income, W for the number of wants, and P for their average price.[8] If wants increase more rapidly than income, then happiness and welfare are actually diminished in the process of development. Something like this seems to have been happening in the rich countries of the world. While their per capita incomes have reached incredibly high levels, human wants have increased even faster, with the result that affluence has not increased happiness. The production and invention of meterial goods and gadgets of all kinds have multiplied with breathtaking rapidity, and the tensions and frustrations arising from the failure of income to keep pace with galloping wants have adversely affected man's health, well-being and happiness.

What have the rich countries accomplished as a result of all their fabulous economic and technological advances? The most basic economic needs of man are air, water, food and shelter. It is precisely these which the peoples of the rich countries of the world lack today. As a result of air and water pollution having reached dangerous levels in the developed countries, the people there do not have pure air to breathe and uncontaminated water to drink. Water and air pollution again have made birds and fishes hardly safe for human consumption. Furthermore, the widespread use of pesticides, insecticides and chemical fertilizers have also made many articles of food hazardous to human health.

Excessive urbanization, over-crowding and serious problems of crime have contributed to increasing insecurity of life in many of these countries. The high and increasing rates of suicides, crime and mental illnesses in the developed countries provide ample proof that total commitment to the goal of over-increasing econonic growth has neither brought about increasing happiness nor increasing material comforts for the peoples of these countries. Moreover, the ever-soaring consumption of the wealthy countries has resulted in the reckless exploitation and depletion of the resources of the earth, that it is compellingly clear to anyone who has not taken leave of his senses that at this rate before long, probably by the end of this century, most of the earth's non-renewable resources would be exhausted. It is therefore time to stop this mad and senseless scramble for producing ever increasing volumes and varieties of man's worldly goods.

Not only has affluence brought in its wake numerous problems and hazards, the rich countries have failed to eradicate poverty within their own borders. In the popular mind there is a widespread feeling that poverty in the rich countries is of different and milder variety than the poverty in the poor countries. This sentiment is reflected in the quip that a poor American is one who washes his own Cadillac. The facts, however, do not bear out this conception of poverty in the affluent societies. The poor in these societies in fact are poor almost for the same reasons that the people of the poor countries are poor

—they take adequate food and nourishment, they do not have proper housing, and they generally are unable to avail themselves of adequate educational and health facilities. Although there is no one accepted definition of poverty, it is customary for people to consider themselves poor in relation to the more fortunate members of society. As long as this conception of poverty is widely prevalent, it is unlikely that we can ever eradicate or even substantially reduce poverty in the affluent nations. All available evidence indicates that incomes in the developed Western nations are highly unequally distributed, and that this pattern of distribution has remained practically unchanged over long periods of time. For example, in Canada, the share of aggregate income before taxes received by the lowest 20 per cent of the families in 1965 was 6.7 per cent while the highest 20 per cent received 38.4 per cent. The comparable figures for the United States in 1972 were 5.4 per cent and 41.4 per cent respectively. These proportions in both countries have remained virtually unchanged over the years. A comparison with the 1951 figures for Canada and the 1947 figures for the United States shows that there has been little change in the pattern of distribution in all the years.[3] Examination of the pattern of income distribution in other developed countries tells the same story. In absolute terms, this means that the economic distance between the rich and the poor in the affluent societies is actually increasing over the years. Therefore, we find here again that the conventional approach to poverty is unlikely to contribute to the elimination of the problem in the developed countries.

Section V : Traditional Economic Theory

According to traditional economic theory, there are natural forces at work in the world which will narrow the gap between the rich nations and the poor nations. The rich nations are well endowed in capital-intensive goods, whereas the abundant resource in the poor countries is labour. Conventional economic theory holds that international trade resulting from the specialization of the rich countries in capital-intensive goods and the poor countries in labour-intensive goods will tend to bring about equality of incomes in both groups of countries. This theory applied within the nation leads to the hypothesis that the rewards of capitalists and labourers will approach equality as a result of these two groups entering into economic relations with one another.[4] In actual practice, things have not worked out that way, and the gap both between rich nations and poor nations and that between the rich and the poor within nations has been steadily widening over the years.

The reasons for this divergence between theory and practice are many, but two important ones may be mentioned. Firstly, the rich nations and the rich persons usually take steps to protect their privileged positions. The legal system, taxes, property laws, monopoly practices have all been employed as instruments for exploiting and holding down the poor nations and the poor sections of society. Secondly, technical progress has favoured the capital-rich nations while labour-intensive occupations in which poor nations specialize are not particularly suited to the applications of science and technology. Within the nations the rich obtained better education, advanced themselves through inherited wealth and patronage, while the poor denied these advantages remaind submerged in a "culture of poverty" that reinforced their lowly station in life. The rich have political power, while the poor are usually politically inarticulate.

The empirical evidence is over-whelming. Given the present international power structure, and the existing economic relationships between the poor countries and the rich countries with a highly integrated world capitalist system, the gap between the rich nations and poor nations will continue to widen. And as long as the capitalist ideology is dominant, the gap between the rich and the poor within nation is also likely to go on increasing.

In view of the poor track record of the strategy of narrowing the gap between the rich nations and the poor nations, and its bleak prospects in the future, given the facts of international economic life, it is pertinent to enquire if we should not abandon the very goal of narrowing the gap and look for new and fresh solutions to the problem of world poverty. It is to this question we must now turn.

Section VI: The Need For a New Approach

Even if it were possible to bridge the gulf between the rich nations and the poor nations by stepping up the rate of growth of the the latter, it is extremely unlikely that our meager planet is equipped to sustain the enormouly increased consumption of the world's scarce resources that such rapid rate of growth must entail. Even at the present rates of growth massive problems of air-pollution, water pollution and resource depletion are posing a serious threat to the very survival of the human race. Faced with this crisis, man has to re-examine the validity of many old ideas and established patterns of conduct. At this critical juncture when man must husband and cherish, rather than waste and defile the limited resources of an interdependent world, it is futile even to attempt to bridge the gap between the rich and the poor both at the national level and the international level. The dictates of logic and empirical evidence suggest that the feverish pursuit of the chimera of international economic equality should be abandoned, and through thoughtful but fundamental changes in values and attitudes, the very concept of economic distance between nations and persons could be rendered irrelevant, while concentrating on eradicating real poverty in the world. The following are some of the lines along which remedy should be sought :

1. The developing countries since they can never really hope to catch up with the developed countries, should abandon all effort to do so. This means abandoning economic growth as the over-riding goal of economic policy. Instead, developing countries should focus attention on other goals such as reduction of inequalities of incomes and wealth, eradication of poverty, maintenance of full employment, reduction of adequate housing, better distribution and utilization of health and education services. The Chinese experience demonstrates the unquestionable benefits of this approach. In the words of Professor John Curley :[5]

> "The basic overriding economic fact about China is that for twenty years she has fed, clothed, and housed everyone, has kept them healthy, and has educated most. Millions have not been covered with multitudes of sleeping, begging, hungry and illiterate human beings ; millions are not disease-ridden. ...In this respect, China has outperformed every under-developed country in the world, and even with respect to the richest one, it would not be far-fetched to claim that there has been less malnutrition due to maldistribution of food in China over the past twenty years than there has been in the United States."

China has thus demonstrated the possibility that mass unemployment, dire poverty, malnutrition, illiteracy, corruption, begging, prostitution can all be wiped out at a modest level of per capita income. If more developing countries follow China's example, the gap between the developed countries and the developing countries will lose much of its significance.

It is because developing countries hold the developed countries as a model to be emulated, that the level of national income and its rate of advance have become the dominant measures of economic performance in the developing countries. If this unwarranted obsession with economic growth is abandoned, and attention is focussed on more meaningful goals such as elimination of unemployment, eradication of poverty and reduction of inequalities, a whole set of new policies will now emerge for the attainment of these goals. In the light of our new values, the top priority that is currently being assigned to large-scale industrialization in developing countries will lose much of its force and justification. Provision of increased employment through the development and spread of small-scale production and development of rural industries will become a major goal of public policy, especially in over-populated developing countries. Large-scale industrialization will be confined to limited spheres of economic activity in a determined effort not to repeat the disastrous errors of the developed countries that has brought our world to the verge of an ecological disaster of massive proportions. Creativity in work, simplicity in economic activity, vitality in rural life and an organic relationship between man and nature calculated to satisfy his need rather than his greed, ideas long associated with the name of Gandhiji will assume a new significance and relevance once the goal of ever-increasing economic growth is abandoned.

2. In the developed countries themselves, the scramble for economic growth must stop. Instead, the goals of public policy should concern themselves with improving the quality of life-reducing environmental pollution, improving the provision of mass transportation services and lessening economic inequalities.

3. In capitalistic societies it has become an ingrained habit to adopt a definition of poverty in relation to the standard of living of the better-off sections of society. As shown earlier, if such a definition is accepted, there will never be an end to the scramble for more and consequently poverty will never be eradicated. In the light of our analysis, it would be more logical to define poverty in absolute terms, that is, in terms of the basic needs of that society at that time. If such a definition is widely accepted then the poor can be helped to rise above their poverty, and to devote their time to cultural and intellectual pursuits. Unfortunately, social workers, economists and policy makers tend to take it for granted that the goal of policy should be to gradually raise the level of living of the hard-core poor to that of the middle-class, and to incorporate the poor into that class. The middle classes always look with envy at the standards and syles of living of the rich and the super-rich.

But actually there is much suffering, superficiality and emptiness in the life and mores of the "Jet Set". If the poor can be made to see this, then they would refuse to join the rat race for even increasing standards of living. Instead they will concentrate their efforts in obtaining the basic amenities of life, and then devote the balance of their time to life in the present. As Oscar Lewis has pointed out "living in the present may develop a capacity for spontaneity, the enjoyment of the sensual, which is often blunted in the middle class, future-oriented man."[6] The appreciation of the emptiness and the meaninglessness of constantly striving for ever-increasing incomes, should not, of course, be confined to the poor. It is only when these values become widespread in the different classes of society in the rich countries, the purposelessness of attempting to catch up with the developed countries will become obvious to the developing countries.

4. Finally, anti-poverty policies should focus attention on freeing the poor from the "culture of poverty" which causes them to perceive reality as a closed world from which there is no escape. To enable them to see reality as a "limiting situation which they can transform", the poor should be helped to organize themselves, and even to administer their own anti-poverty programmes.[7] As a rule, capitalistic societies have tended to generate and nature the "culture of poverty." Oscar Lewis who had studied slums in Havana in 1947, returned to the island, after Cuban revolution, and revisited the same slum and found the following change :[8]

> "The physical aspect of the place had changed little... The people were as poor as before but I was impressed to find much less of the feelings of despair and apathy so symptomatic of the culture of poverty in the urban slums of the U.S. The slum was now highly organized, with block committees, educational committees, party committees. The people had found a new sense of power and importance in a doctrine that glorified the lower class as the hope of humanity...".

The chief weakness of anti-poverty programmes to date in the developed countries has been the failure to confer this sense of power and importance to the poor. Rectifying this weakness is the most important single task facing the anti-poverty policy maker.

In developing countries too, of course, the need to develop bold and imaginative anti-poverty programmes is urgent. In their efforts at economic development too, they should be encouraged to stand on their own feet, and not become excessively dependent on developed countries through foreign aid and foreign investment. Poor peoples in these countries should be helped to extricate themselves out of the "culture of poverty" in which they are sub-merged, and find a new sense of power and hope. This will mean ending centuries'-old exploitation and social injustrices the poor and the weak in these societies have suffered at the hands of the dominant classes.

To sum up, this paper has argued that the solution to the problem of world poverty is likely to be facilitated by the recognition of the existence of rich and poor classes of peoples in both the developing and developed countries of the world. Since an appeal to empirical evidence convincingly demonstrates the futility of the poor nations trying to catch up with the rich nations as well as poor people in the rich countries attempting to attain the income levels of the richer members, it is suggested that the goal of ever increasing economic growth should be replaced by the goal of eliminating "hard-core" poverty in both the developing and the developed countries. Such a major shift of goals would no doubt entail a substantial 'cultural change' on the part of peoples everywhere, but the threat posed to our planet by the cumulative ecological damage unleashed by our present commitment to unlimited economic growth suggests that that such a shift of values and attitudes is demanded by the compulsions of human survival.

Footnotes

1. Even in the present day, the rich countries manage to draw away from the poor countries a certain proportion of their best scientists, doctors, engineers, and other high skilled labour. This phenomenon has come to be known as the 'brain drain.'
2. In Charles Dickens' *David Copperfield*, Mr. Micawber expresses the same philosophy : "Annual income twenty pounds, annual expenditure nineteen nineteen six, result hapiness. Annual income twenty pounds, annual expenditure twenty pounds ought and six, result misery."
3. *Incomes of Canadians*, Taxation Department, Ottawa, 1950, 1960, 1970, *Income Distributions*, D.B.S., 1969, (Cat. 130529).
   Economic Report of the President, January 1974, Washington, U. S. Gov't, 1974.
4. David M. Gordon, Theories of Poverty and Underemployment Lexington, Massachusetts, D.C. Heath and Company, 1972.
5. John W. Gurley, "Maoist Economic Development : The New Man in the New China," The Center Magazine, Vol. III, No. 3, May 1970, pp. 25-33.
6. Oscar Lewis, "The Culture of Poverty," *The Scientific American*, Vol. 215, No. 4, 1966, p. 23.
7. Paulo Freire, *Pedagogy of the Oppressed*, New York, Herder and Herder, 1971.
8. Oscar Lewis, op. cit., p. 25.

Oil Prices, Adjustment Mechanism and the Developing Economies

D. D. Guru*

The oil prices have been a matter of great concern and discussion in the international as well as national forums dealing with economic policy issues. It would be interesting, therefore, to review the problem of oil prices in the context of its impact on the international monetary system on the one hand and the pace of development in the developing economies on the other.

The present paper aims at analysing the implications of the rise in oil prices in relation to the problem of adjustment in the balance of payments in the international monetary system as well as the need of development finance on the other. The paper is divided into two parts. The first part presents a review of problem of oil prices. It will discuss in this connection the mechanism of oil price fixation in relation to cost of production, royalty and taxes in historical perspective. The second part points out the significance of the oil price fluctuations on adjustment mechanism and the problem of financing of development in less affluent economies.

I

The behaviour of oil prices saw marked rise since the beginning of seventies. As compared to the period of relative stability before seventies the oil prices had persistent sharp increasing trend during the first five years of seventies, especially during 1973-75 following the Arab-Israel War. The rise in prices followed the change in the organisational and administrative set-up of the oil production and pricing system. The price changes have been initiated by the Middle-East countries which are the major producers and largest exporters of oil in the world.

The production and marketing of oil have been managed by holding companies which are mostly the affiliates of the Anglo-

---

* Professor of Economics, L. N. Mishra Institute of Economic Development & Social Change, Patna.

American International Oil Companies. These holding companies have been *working under agreements of concession by the Governments of* oil producing countries. These agreements and concessions granted by the Governments of the oil producing countries provided the companies the right to fix prices, levels of production and investments etc. Recently the Governments of the oil producing countries have been proposing changes in the terms of agreements.

The oil producing countries have been co-ordinating their efforts through the Organisation of Petrolium Exporting Countries (OPEC) which was established in Middle-East, Africa and the Latin American countries consisting of Saudi-Arabia, Iran, Venezuela, Iraq, Kuwait, Nigeria, United Arab Emirats, Indonesia, Libya, Algeria, Qatar, Gabon Equador. They all fall in the group of developing countries. The OPEC provided great strength of bargaining about the production, prices and investment policies of oil.

The holding oil companies could determine the levels of production, investment, export and prices up to 1969. These companies had substantial bargaining leverage in their negotiations with the Governments of the oil producing countries mainly due to the surplus producing capacity. This situation, however, changed with the beginning of 1970's when the bargaining power of the oil companies began to be curtailed. The producing countries took over from the companies the power to set production levels, to designate or embargo export destination, to direct investment and to set prices during 1973 Arab-Israel War. The oil producing affiliates of the international oil companies have become subservient to the directives issued by the Governments of the oil producing countries.

The pricing of petrolium products used to be determined earlier by the multinational companies dealing with various processes of production and distribution of oil. The petrolium companies have been the pioneer multinational corporations. These companies were the first business enterprises to adopt world-wide strategy of profit maximisation. They were also first to locate a large part of their assets outside their home countries and first to depend on foreign derived income constituting more than half of their profits. These multinational corporations provided best example of the use of oligopoly power to control markets and fix prices and drive out competitions.

The oil industry has been famous for its high profits which were caused due to the pricing policy followed by the multinational companies controlling production and distribution of oil. The profit resulted because of the lower cost of production of oil in the United States. According to a study by Chase Manhatan Bank, in the early sixties the average cost per barrel of maintaining and expanding production in the Middle-East was 16 cents while the Venezuelan cost per barrel was 51 cents and the U.S.A. cost was $ 1.75. Moreover, the Middle-East cost had been moving down over the years and the Venezuelan and U.S.A. costs have been moving up. The prices of oil controlled by the big multinational companies have been historically based on the price of oil in the U.S.A. which until World War II was the major supplier of crude oil and petroleum products on the world market.

The prices of oil were fixed according to the Basing-point-Formula. Under this formula, Texas was taken to the basing-point and the prices of crude oil around the world even in Middle-East were set at Texas prices plus the cost of transportation from the Gulf of Maxico to the purchase point. The transportation costs were fixed arbitrarily and were far above the actual cost. The benefits arising out of such higher prices went to the multinational companies.

This system of pricing continued till the end of Second World War. With the emergence of Persian Gulf as the main source of oil for Europe and Eastern Hemisphere opposition against this system of pricing started and British Government started investigation into the problem of oil prices. The multinational companies did not provide data relating to cost of transportation but lowered the price of Persian Gulf supplies to match Texes prices.

The fifties saw the monopoly character of the industry being partially eroded by contradictions within the industry as a whole between major multinational companies themselves. The scramble for higher profit led to the phenomenon of over-supply and hence lowering of prices. The entry of Soviet Union as major supplier in Europe further helped the trend towards lowering of oil prices. In February, 1959 and again in August, 1960 official or posted prices at the Persian Gulf were cut to reflect the weakening market price.

The revenues of the Governments of oil producing countries were directly tied to the 'posted price' per barrel of crude oil multiplied by number of barrels produced. This created no problem as long as posted price was more or less equivalent to the 'selling' price. By lowering of the 'posted price', the major oil companies were able to pay less in tax to the producing countries. During 1959 and 1960, price cuts were undertaken unilaterally by the multinational companies without informing the Governments involved. This offended the

Governments of the oil producing countries and this actually led to the formation of the Organisation of Petrolium Exporting Countries (OPEC) during 1960.

There has been marked change in the pattern of pricing system of oil after 1973. The so-called 'posted prices' are set since October, 1973 by the Governments of the oil producing countries. These prices have traditionally been used as reference values for assessing tax and royalty obligations of the concession holding companies. For the past two years they have also served as the basis for determining the official sales prices for Government oil. The 'sales price' for the Middle-East Gulf produces amounts to 93 per cent of posted price.

Until 1973 the international oil companies owned all the oil produced from their concession. The exporting countries share consisted of royalty and income tax payments. Effective from January 1, 1973 several Persian Gulf countries members of OPEC entered the *General Agreement on Participation* under which they obtained 25 per cent of equity shares in oil companies concessions. The shares were raised to 60 per cent effective from January 1, 1974. Under these arrangements the average cost of oil to the companies is composed of two parts viz :

(i) their own "equity oil" on which they continue to pay royalty and income taxes, and

(ii) *participation oil* which they buy back from countries. The volume mix of 'equity' and 'participation' oils determines the cost to the companies.

Prices of OPEC all are based on Saudi-Arabian 34° API light crude oil which serves as the reference (maker) crude for all OPEC oil. In October, 1973 members of the OPEC raised 'posted price' of crude oil by 70 per cent followed by a rise of 130 per cent in January 1, 1974. Embargoes were also imposed. The production levels were also curtailed. The spot prices rose rapidly. It, at times, reached levels almost twice as high as posted prices. Average of crude oil prices for 1973 as a whole were about 30 per cent higher than the previous year. Delivered prices of crude oil for all of 1974 were estimated to have averaged about 10 a barrel.

We can have an idea the rise in prices of crude oil and producer-Government's revenue of OPEC countries during the past five years from the following Table.

It can be easily seen from the above table that there has been a persistent trend of rise in crude oil prices since 1971. The rate of increase was moderate during 1971-73. But the year 1974 showed the sharpest increase from $ 2.80 per barrel to $ 9.70 per barrel. There has been an increase in the rate of producer-Governments revenue over the years. It increased from $ 1.20 per barrel (with price at $ 2.10 per barrel) during 1971 to $ 10.20 per barrel (with price at $ 10.90 per barrel) during 1975.

Table I

Year	Crude Oil Prices in $	Producer-Government's Revenue (U.S. $ per barrel)
1971	2.10	1.30
1972	2.20	1.40
1973	2.80	2.10
1974	9.70	8.50
1975	10.90	10.20

The Ministerial Conference of OPEC further decided to raise the price of reference crude oil, Arabian 34° API by 10% to $ 11.57 per barrel, effective from October 1, 1975. The detailed breaks up of the impact of change in oil prices on taxes, royalties, etc. are indicated in Table II given below :

Table II Oil Prices, Cost and Revenues in 1975
(U. S. $ net barrel of Saudi Arabia 34° crude oil)

January 1, 1975	
1. Posted Price	$ 11.5
2. Official sales Price (93% of (1)	$ 10.46
3. Production Cost	$ 0.12
Equity Oil's Price Cost and Revenue	
4. Royalty payment [20% of (1)]	$ 2,25
5, Income-Tax [85% of (1-3-4)]	$ 7.55
6. Government Tax (4)+(5)	$ 9 80
7. Cost to the Company [(6)+(3)]	$ 9.92
Participation Oil Cost and Revenue	
8. Cost to the company (buy back price)	$ 10.46
9. Net Government take (8)—(3)	$ 10.34
Weighted Cost and Revenue	
10. Official Sales Price	$ 10.46
11. Cost to Company [40% (7)+6% (8)	$ 10.24
12. Company Profit	$ 6.22
13. Government tax [40% (6)+]% (9)	$ 10.12
October 1, 1975.	
14. Recent Vienna Price Increased [10% (2)]	$ 1.05

15.	New Government Tax [(13)+(14)]	$ 11.17
16.	Average New Cost to Companies [(15)+(3)]	$ 11.29
17.	The New Official Price [(16)+(12)]	$ 11.51
18.	Percentage Increase in Govt. Tax (14)+(=3)	10.37%
19.	Percentage increase in Cost to Companies (14)—(11)	10.25%

The above table reveals interesting facts. Quite apart from the rise in the official price from $10.46 per barrel to $11.51 per barrel between January and October, 1975, the table shows constituents of the Equity Oil's Price and the participation oil cost. The official sales price is 93 per cent of the posted price. The rate of royalty payment is 20 per cent of the 'posted price'. The rate of income tax is 85 per cent of the difference between posted price on the one hand and the sum of production cost and royalty payment on the other. The costs to the Company consist of the production cost and the Government tax. The latter consists of income tax and royalty payments. Under the weighted cost and revenue, the Government tax consisted of 40 per cent of the Equity Oil Price cost and the sixty per cent of participation oil cost. Such weighted Government Tax stood at $10.12 according to the January 1, 1975 announcement. This increased to $11.51 according to the October 1, 1975 announcement. There was 10.3 per cent increase in the Government Tax and 10.25 per cent increase in cost to the companies according to the October 1, 1975 announcement.

II

The rise in oil prices place a heavy burden on the balance of payments of most of the non-oil producing countries especially the developing countries. Oil accounts for about half of the total energy consumption of developing countries. For example, petroleum is the largest source of primary commercial energy in India. It provides 26 per cent of the total and 51% per cent of energy consumed compared to 2 per cent and 41 per cent provided by coal.

The increase in oil import bill of non-oil producing developing countries for 1974 alone was estimated to be roughly around $10 billion. The rise in prices of oil led to increase in the value of total imports. The most seriously affected developing countries on account of the rise in oil prices are Uraguay, Thailand, India. The Philippine, Korea, Ethiopia, Turkey, Pakistan, Brazil and Uganda whose increase in total import bill on account of higher oil prices were 39 per cent, 26 per cent, 24 per cent, 23 per cent, 20 per cent, 20 per cent, 19 per cent, 16 per cent, 16 per cent and 15 per cent respectively.

The higher import bill has constituted a loss in real income which has eventually to be borne by reductions in current private and public consumption or failing that reduction in investment. The increased oil cost, like any other permanent net adverse effect on the terms of trade represents a transfer of resources away from that country.

The real resource impact of the oil price increase has substantial negative impact on the rates of growth as also on the already intractable problem of shortage of capital in many developing countries. The impact of the rise in oil prices during 1973-75 on the balance of payments of the developing countries has to be seen with reference to the performance of export of developing countries in the years immediately before the current spell of rise in oil prices.

The developing countries as a whole had a very successful export year during 1972-73. The total value of their export to OECD countries rose by nearly 50 per cent over 1972 following 17 per cent gain in the previous year. Higher export volume accounted for about 60 per cent of gain during 1973. The average prices of developing countries imports from OECD rose by 19 per cent during the same year. The increase in import prices, however, fell behind average export prices of non-oil exporting developing countries. Their terms of trade improved by 9 per cent as compared to 1972.

These gains, however, represented no improvement over the levels of the terms of trade in 1959. The total reserves of the non-oil producing developing countries had increased by $7.4 billion or 28 per cent during 1974. In contrast to such good position the balance of payments position of the non-oil producing developing countries their trade balance vis-a-vis the OPEC countries deteriorated by about $10.15 billion during 1974 on account of rise in prices of oil during 1974.

The sharp increase in prices of oil required the payment of $ 100 billion by the rest of the world to the oil exporting countries. Part of it was likely to be spent by oil exporting countries for food and other consumption goods, some for weapons and also some for long term development. The purchases made by the oil exporting countries the from rest of the world is likely to take some years. The oil producing countries received $50 billion to $60 billion 'extra' fund in 1974 from industrial countries plus $10 billions to $15 billions from less developed areas.

The problem of adjustment of such gap automatically arises both for the developed and developing countries. We take up the case of developing countries. The non-oil producing developing countries could adapt to the higher oil prices by demand restraint on the one hand and through energy conservation—by development of energy sources, reviewing domestic investment priorities and technologies and also by increasing their export potential on the other. These structural adaptations, however, require time. Besides, these measures are likely to directly affect the rate of growth of such economies which is bound to prove disastrous. In the meantime the developing countries, therefore, have to maintain a minimum level of essential imports.

Another way of meeting the deficit could be that these countries finance their increased trade deficit temporarily by drawing on own reserve resources or on commercial sources of finance. This does not appear to be quite feasible in the near future due to the fact that for many developing countries existing indebtedness is already such that substantial further borrowing may cause an excessive debt service burden in relation to prospective export earnings.

The debt burden of developing countries has continued to grow and a number of them experienced serious debt difficulties. The debt problem has been further accentuated by oil crisis. At the end of 1972, their outstanding debt was $103 billion which with some $50 billion of private foreign investment constituted their total exchange liabilities. The current cost (interest and direct payments) to developing countries on their disbursed contractual debt outstanding is $2.6 billion annually equivalent to a rate of 3.5 per cent. For foreign private investment a rate of return of 10 per cent or $5 2 billion may be assumed. This means that for their total liabilities in the form of contractual debt and non-contractual private overseas direct investment developing countries are paying $7 8 billion as interest and dividend charges equal to 6.1 per cent of their total liabilities.

The critical debt position of the developing countries has to be seen also from the angle of balance of payments problem of industrialised countries who are supplier of aid and loans to the developing countries. The rise in prices of oil had dominant impact on the balance of payments of such industrialised countries. The reason for the dominant impact of rise in oil prices on the balance of payment position of the industrialised countries may be taken to be the following :

(a) Oil is the single most important commodity in international trade in terms of value ; (b) in short-run the elasticities of demand for oil and of supply of alternative sources of energy are low ; and (c) enlarged oil incomes are concentrated in the very small population whose expenditure on imports could not approach the prospective build-up in these export earnings for some time.

The total dollar value of world exports increased by 47 per cent in 1974 and reached $850 billion as compared to the increase of 19 per cent during 1972 and 10 per cent a year on average in the preceeding decade. The total estimated oil revenues of petroleum exporting countries in 1974 were $94 billion. After allowing for exports other than oil, for imports, for certain current transaction, and for credit given to oil experts, the surplus available to oil exporting countries has been estimated to be about $56 billion. The oil income of the Middle-East countries increased to the level of $56 billion in 1974 from around only $4 billion during 1970. The oil revenue of the OPEC members increased on the other hand from $15 billion in 1972 to nearly $100 billion in 1974.

The creation of surplus of this magnitude with the OPEC countries, naturally, made the balance of payment position of the industrialised donor and lending countries too weak to enable them to route the flow of finance to the developing countries.

An avenue devised by the I.M.F. to solve the adjustment problem arising out of the rise in oil prices has been the creation of a separate 'Oil Facility' under which medium-term loans are provided by I.M.F. The Fund's Oil Facility, however, could not be a complete answer to the needs of the weaker developing countries in financing higher cost of oil imports. Many of these countries are already over-extended in respect of short-term and medium-term borrowings. Moreover, the high rate of interest charged under the 'Oil Facility' goes against the interest of the developing countries. A naive solution of the adjustment problem facing the developing countries arising out of oil crisis through deflation of the economy for boosting the exports is not at all suitable for the developing countries especially in view of the already mounting pressure of unemployment in such economies.

The only course open is the divising of some kind of fund from which loans and grants could be provided to the non-oil exporting developing countries for solving their balance of payments problem with minimum damage to their development programme. The role of oil exporting countries in the creation of such fund with special provision for developing countries is the unavoidable necessity. The problems of recycling generally discussed in the context of industrialised economies have to be oriented more in favour of the problems of the developing countries. The surplus of oil exporting countries needs to be directed in maximum possible magnitude towards meeting the development needs of the developing economies. The investment of the surplus funds with oil exporting countries in the non-oil producing developing countries has to be encouraged and built into the system of recycling ordinarily discussed in the contact of developed industrialised countries,

The Expansion Dilemma : Choice of Policy instruments

Priyatosh Maitra*

In this paper an attempt has been made to analyse the policy controversies facing the developed capitalist economies. It is well known today that this controversy first came to the surface in the 1930s depression period and Keynes won the day.

The world faces today more or less the same situation except the fact that today the recession has come hand in hand with inflation. There has been going a lot of tossing the coin of policy, whether the monetary policy or the fiscal policy or, in other words, micro economic approach letting market forces adjust themselves on their own to automatically reach equilibrium or macro economic approach asking Government to interfere and actively participate in economic activities to hasten equilibrium at full employment.

This paper has been prepared with the New Zealand economy and its Government policy as the basis. But the discussion is equally applicable to other countries though broadly.

New Zealand economy is essentially foreign trade oriented i.e. exporting primary products, international demand for which is associated with high income economies, and importing mainly raw materials and technology to suport its manufacturing sectors. The New Zealand economic structure is highly developed with only 10-11 percent of the labour force depending on agriculture despite the fact that nearly 80 percent of the export earnings and 19-20 percent of net national output come from this sector.[1] This indicates the highly sophisticated primary sector, inputs of which come from the secondary and tertiary sector. Being a trade based economy its tertiary sector is unsually large accounting for nearly 60 percent of the labour force. But as it is a highly developed economy it requires an increasing supply of sophisticated skills, considered to be the most important input in these labour short economies. Tertiary sector has the responsiblity of supplying it.

---

* University of Otago, New Zealand.

[1] N. Z. Monthly Abstract of Statistics, N. Z.

New Zealand economy has always enjoyed full employment in the literary sense of the term with less than 1 percent unemployment. Even during this pesent recession, unemployment rate is less than 2 percent. This aspect of the labour market, together with high income per capita, relatively egalitarian income distribution in a capitalist framework, extensive social security system, small manufacturing sector to cater for high consumer demand resulting from high income distribution effects and dependence on imported inputs (implying importation of inflation of other capitalist economies) are some basic causes of inflation proneness of New Zealand economy.

It is to be pointed out here that trade based economy would always have very large tertiary sector which absorbs a large part of the labour force in the internal trade and, as such, a part of this sector could be linked to a well which will drip water if it is rung hard. In other words, this sector has a pocket of surplus labour, productivity of which is less than the money income that goes to its share. The smallness of the size of the market in terms of population (i.e. 3 million) has made manufacturing activities in this high income economy highly expensive in terms of labour, raw materials and transport costs (imports and exports involve a large transport costs due to distance). However, high income implies a large market but in a competitive capitalist economy, this largeness does not seem to be large enough for a small country like N. Z. The inevitability has been the growth of monopolism which does not solve the problem of inflation proneness of labour short economy.

With this broad outline of the New Zealand economy in mind, we proceed to the policy controversies that are making the political atmosphere of these countries hot.

We will have to go back to the history i.e. we should recollect some aspects of the last severe depression that these developed countries faced forty-five years ago.

In the 1930s, when the world crisis had produced a sharp increase in the deficit on the U. K. balance of payments, the appropriate remedy was to cut expenditure so as to balance the budget. In those years British orthodoxy was still dominated by nostalgia for the world before 1914. Then there was normality and equilibrium. To get back that happy state its institutions and its policies should be restored and it would be necessary to keep the gold standard at the old sterling parity, balance the budget, maintain free trade and observe the strictest laissez-faire in the relations of government with industry, When Lloyd George proposed a campaign to reduce unemploynent (which was then at the figure of one million or more) by expenditure on public works, he was answered by the famous Treasury view that there was a certain amount of saving at any moment, available to finance investment and if the government borrowed a part there would be so much the less for industry. These were the orthodox views that prevailed in the realm of public policy. In these days economic activities were influenced by monetary policy suitable for micro-economic situation. These policies were not successful as supsequent events showed and the Keynesian prescription of macro-economic policy of increased public expenditure was adopted which had the desired effects.

During the prosperity period of the sixties, when full employment was prevailing, macro-economic approach that rescued capitalism from the 30s depression, lost its importance and the pendulum had begum to swing back to micro branch—i.e. to individual parts of the economy. There was a feeling at this time that the major macro-economic problems were at least well under control and the monetary policy would do the rest.

When the current world recession began to set in since the 70s, the public policy remained dominated by nostalgia for the world of the sixties and monetary policy has remained since then dominant in public policy of most governments of the capitalist world.

In New Zealand, however, Labour Government followed Keynesian policy of expansion through direct government expenditure to maintain full employment and diversify the economy to remedy its balance of payments instability mainly based on primary exports. It has been increasingly evident in recent years that primary exports have been losing ground in the markets of developed countries which are suppliers of manufactured goods mainly capital goods and technology to New Zealand. New Zealand has a tradition of full employment almost in a literary sense of the term—and in such a situation. to follow an expansionary policy needs more productive capital goods to use the existing labour force more productively. Export being deficient, borrowing fills the gap. This is a short-term measure.

* John Robinson—What has become of the Keynesian Revolution, p. 1.

The government policy of borrowing from overseas to maintain full employment and as an expansionary policy, has not been properly appreciated. Its negative aspects have been more emphasised than positive contribution to the maintenance of full employment and as an expansionary policy. That borrowing is more positive in its effects than negative particularly in the context of New Zealand situations today, needs more sympathetic understanding of this policy.

Investment in general results into economic growth. In the free enterprise capitalist society, investment is largely financed by borrowing from the public. Investors borrow from the people who are willing to lend to earn. In this society, borrowers of funds for growth and lenders of that fund are principal actors in the economic drama. Investment, in other words, borrowing for growth, creates employment and aggregate demand, is another principal actor round which this growth drama revolves.

The capitalist economists of the world in the 20th century, particularly since the 50s, have become interwoven through trade and investment collaboration between countries that fluctuation in one country would create repercussions in the other and recovery from or a solution to such fluctuations largely depends on the economic polices and actions of the other. This is particularly true of countries in which foreign trade plays a dominant part.

The recession in the developed capitalist economies has revealed a paradox of idle capacity in the economy in the form of partly unutilised capital and unemployed labour, in other words, despite the existence of productive capacity and factors of production to activate it, increasing proportion of this capacity is becoming idle and output is falling. Modern economists argue that the above phenomenon has been caused by the lagging expectation of returns from investment by entrepreneurs because of the lack of demand. Whereas the lack of demand has been caused by the growing under-utilisation of factor capacity, and thus a vicious circle has ensued. As a solution, two alternative policies are in vogue. One is the monetary policy and the other fiscal i.e. government expenditure policy to stimulate aggregate demand. The former is one of creating incentive for investment without direct government participation in economic activities in the free enterprise economic system i.e. by manipulating interest rates and raising prices. This policy attempts to create incentive for expansion to business people. This is more or less in the line of classical economists i.e. by raising price level higher than money wage rates, the policy makers influence the investment decisions of the entrepreneurs for expansion. Obviously, it is slow in effect in the sense that first it does not initially create substantial expansion in aggregate demand because of the already existing capital which is not fully utilised and therefore does need investment and employment of labour and secondly, the policy of manipulating interest rate does not act as an incentive to business people at the time of recession characterised by the uncertainty of the rate of return from investment. Under this policy, government expenditure is reduced as a means to fight inflation and steps are taken to improve the liquidity of the money market to facilitate investment. But its success depends on how, as a result of this policy, aggregate demand is influenced, which is rarely encouraging during recessionary periods for reasons stated before. Monetary policy is highly effective during prosperity or boom periods according to both schools.

The 1960s prosperity period is a case in hand which has led to the revival of monetarism and today monetarism forms the dominant part of economic policies of governments run by conservatives.

On the other hand there are fiscalists i.e. people who advocate increasing government expenditure as an expansionary policy to create employment opportunity and thereby expand aggregate demand as the only way out of recession. Because increasing demand alone would create incentive to investors. In the case of New Zealand the economic activities are largely determined by its ability to import against its agricultural exports, the prospect of which is not bright enough to enable its economy to diversify as a cushion against future difficulties. Imports, borrowing and sacrifice in the living standerd would help mobilising resources for expansion and diversification. Monetary policy would help balance the budget at a low level of income and eliminate the trade deficit at the sacrifice of growth. The common factor in both policies is the lowering of the level of living of the people but with a basic difference. With the expansionary public policy, there is an explicit objective i.e. to attain in the long run a higher level of growth and a higher level of living with full employment ; while with monetary policy, there is no such explicit objective of the public policy which leaves the economy at the mercy of the market mechanism i.e. at the hands of big business communities.

The Muldoon* Budget of last March shows again that the responsibility of raising the rate of growth of the economy to reverse the trend of growing excess idle capacity in plants and equipment, and in labour markets in terms of unemployment, has been left entirely to the private sector. In this policy, Government responsibility has been kept confined to the establishment of an economic environment that is conducive to encourage confidence in investors and thereby, expansion of investment activities. The policy of the borrowing from overseas of the present Government has been designed to that effect.

But the question remains, would it work ? Would the private sector undertake the risk of increasing investment in an economy that faces a downward trend in aggregate demand ? Would the prevailing high price in an atmosphere of increasing unemployment and consequent falling aggregate demand be sufficient enough incentive to create that confidence ? Or, would a deliberate and direct Government expenditure policy to utilise the existing idle capacity be more effective in solving the problems of a cost-push inflation causing the present downturn trend in the economy ? That the economy is not in a demand pull inflationary situation is evident from the growing problems of excess capacity in plants and equipments as well as in labour market and therefore, an increase in Government expenditure to absorb these excess capacity is not expected to push up inflationary spiral (if a proper pricing policy is followed), rather this policy by raising the productivity of the economy may help solve the problems of inflation with unemployment. This is how the Keynesians think.

A brief discussion of comparable situations of other developed economies would help us understanding the problem. It has been done in the next section.

The scope of reexpansion is provided by record uuemployment and record spare capacity whereas the continuing high inflation rate averaging an annual 7-8 percent is being offered as the barrier by all conservative governments of all developed countries. In U.K., the conservative section of the Labour Party, now in power, is following a contractionary fiscal policy.

The following table shows that all other major industrial economies are still suffering from abnormally high unemployment and abnormally high inflation. The basic causes have been explained.

---

* Mr. R. Muldoon, The Prime Minister of N. Z. He is also the Finance Minister.

Table 1

Unemployment and Inflation in Major Industrial countries

Countries	Unemployment % 1962-1973	1976	Inflation % 1962-1973	1976
U S.A.	4.6	7.3	3.3	6.0
Germany	0.6	3.4	3.2	5.0
Japan	0.8	2.0	5.7	9.5
France	2.2	4.3	4.4	11.0
Britain	3.1	5.8	4.9	16.0
Italy	3.5	3.7	4.3	20.0
Canada	5.1	7.2	3.3	10.0

Source : Based on the Study of The Economist, October 2, 1976, pp. 83-85.

Table 1a

	Estimated % growth in money gnp 1976 (1)	Money growth target % (2)	Money stringency % 3=(1−3)
U.S.A.	+13	+10	−13
Germany	+11½	+8	−3½
Japan	+17	none	—
France	+17½	+16	−1½
Britain	+20	+12	−8
Italy	+25	+18	−7
Canada	+13½	+10	−3½

Source : The Economist, October 2, 1976, P. 85.

It has been pointed out by the Economist that all these countries are planning for monetary growth slower than the expected growth in money gross national product—with indicators of −7 for Italy, −8 for Britain (to note here that Italy and Britain are still following fiscal expansionary policy although in a relatively mild doses—the Author), between −1½ and −3½ for Japan. All these countries are running government budget deficits in the current year with the biggest deficits as a percentage of gross national product, Italy 10 percent and Britain 5¾ percent. But though these two countries are experiencing the highest inflation rates, their unemployment rates are lowest except those of N Z. and Japan, countries with different labour market situations.

One other point in this connection needs some explanations. The government budget deficits are still considerable despite deliberate

(Continued on page 81)

Choice of Technology in Agriculture Problems and Implications

G. P. Mishra*

The Malthusian type of agricultural economy witnesses the operation of the Ricardian type of agricultural production function where the productivity of land per acre as well as labour per unit remains at a low level. Hence changes in its production technology are felt most essential in that type of economy which is caught in the Malthusian trap of growth.

Technological change expands both output by raising the efficiency of input use and employment by increasing the demand for labour. But the relative growth rates of output and employment depend on the type of technological change, viz. the path of technological function which is to be brought about in agriculture. More caution is needed for choosing between alternative paths of technological function in the process of growth. This is needed in view of the subsequent effects of technological change in the process of income distribution. This is what we learn from the adoption of new farm technology in Indian agriculture during the Sixties which led to unequal distribution of incomes between different groups of rural population in the country.

Against the above background, this paper makes an attempt to discuss the choice-making problems and implications of technological change in Indian agriculture.

I. Policy Norms

There are three main objectives on the basis of which the choice-making process of technological change is made :

(a) maximisation of output,
(b) maximisation of employment, and
(c) minimisation of income inequality.

All these objectives are said to be conflicting in character, when an attempt is made to choose a technology on the basis of them. The choice becomes more conflicting in nature when the third objective is taken into account for choosing a technology in agriculture. Hence assuming the structure of production, land relations as given, the distributional norm is taken at the background of choosing a technology on the basis of the objectives of output and employment maximisation. It is argued that there will be no difficulty in choosing a technology in order to maxmise output and employment. If that chosen technology is generating inequality, policy measures should be adopted for directing the process of changes in those pockets which are economcially depressed, and for distributing the gains from them among those areas or pockets that are deprived of reaping the fruits of such changes. Considering the distributional aspect of technology, the policy-makers are advised to base their technological choice-decision on the criteria of output and employment maximisation.

---

*Fellow in Economics, Rural Economics Unit, Institute for Social and Economic Change, Bangalore.

Maximisation of output depends on two components : yield per acre and productivity per worker. Thus technological change should maximise both employment and output. Employment maximisation implies the creation of a maximum number of employment opportunities which can observe maximum number of labour force by optimising the duration of working hours per worker in a given technological set-up. It is held so because the problem of rural unemployment lies in the liquidation of surplus labour force that exists owing to unutilisation and underutilisation of available mandays to the working force.

II. Output and Employment—Conflicting Norms

These two norms are regarded as conflicting in nature, so far as their preference is concerned. The exponents of 'employment school' believe that the choice of technology should be made on the basis of 'number dimension' because capital scarcity exists with an abundant supply of labour in an agricultural economy. On the contrary, the propounders of the 'productivity school' believe that technology should be selected with a view to widen ng 'productive' dimension in agricalture which will maximise output and consumption per head in future by generating more reinvestible surplus. The employment-absorption criterion has socio-economic importance whereas the productivty norm has purely economic significance.

Both views have their own justification. Employment expansion eradicates social malady by making unemployed employed and leads to distributive ustice. Productivity generation leads to increase in surplus for reinvestment which will raise output and consumption in the long-run. But such a controversy is more appropriate for the industrial sector than for the agricultural sector which has firstly to feed millions poor.

The employment of labour in agriculture means the engagement of idle labour power in performing certain agricultural operations which have bearing upon production. The engagement of idle labour power in the performance of agricultural operations raises the yield of land per acre and the productivity of labour per head by putting more units of work in agriculture and thereby transforming them into production of commodities. Hence these two norms are not conflicting but complementary in character. They become conflicting when the choice of technology between labour-intensive and capital-intensive types arises in a pure sense. Most of the agricultural operations are labour-using if high degree of mechanisation is avoided. Mechanisation of high capital intensity with increase in area under HYV crops and irrigated area leads to increase the intensity of cropping which raises the requirements of labour in some proportion. Therefore, such a controversy has a little scope to arise if the capital-substitution effect of technology is counteracted by the intensity effect of cropping with the expansion of irrigation facilities and the adoption of HYV crop cultivation. Hence the main criterion for choosing technology should be such as more idle labour power is absorbed into agricultural operations leading to rise in the productivity of land and labour. But that technology must be land-saving in operation which is also synonymously used for land-augmenting.

III. Investment Policy

The determination of technological choice is actually related to investment policy. The aim of investment policy should be to invest capital of some minimum quantum for providing a new variety of technology with sufficient water supply, fertilisers, and other complementary capital equipments which are needed to perform different agricultural operations. This type of investment in technological change will lead to an increase in average productivity of both land and labour (Mishra, G. P., 1969). But this part of investment policy will not lead to technological change with a full swim if some capital is not invested in man for the growth of human capital which takes place in the form of skill formation and knowledge. 'Learning how best to use modern factors entails both knowledge and skills on the part of farmers' (Schultz, T. W., 1970, p. 174). Hence Schultz has pointed out that 'the acquired capabilities of farm people are of primary importance in modernising agriculture and these capabilities like capital goods are produced means of production' (Ibid, p. 175). This is true because lack of awareness due to lack of expectation, gathering information, knowledge, and such other things has been supposed to be an important obstacle to the diffusion of the new variety of technological changes introduced in Indian agricultue' (Ibid, p. 175). Investment in farm people in the shape of education, training, research, and extension services will not only widen the dimension of technological diffusion but will also raise the productivity of capital invested in agriculture. The importance of such an investment is necessitated as 'low level of schooling of farm poeple becomes a limiting factor in the rate of growth from agriculture' (Horvate, S., 1958). It is also observed that the low level of education, schooling, training through extension services, and research have been a limiting factor not only for the wide spread of technological change in rural areas but also for infusing 'technical dynamism' among farm people. Choudhary (1969) has statistically observed that the level of productivity in agriculture is significantly related to the education of the farm workers and the pattern of demand for strategic inputs like fertilisers is significantly influenced by the education of the farm workers. VVD and GGG (1970) have shown that literacy and education in rural areas have significant bearing on modernisation of agriculture. All this indicates the importance of investment in farm poeple for expanding their 'technical dynamism' and capabilities through education that leads to learning how best to utilise inputs and handle the techniques of farming. Hence the pragmatic approach of planning to investment policy is hinged on the way and manner of investing capital for changing farm technology in order to maximise output and employment expansion.

IV. Exposition

It is clear from the above that the objective of farm investment policy should be for investing capital in a manner to promote technological change of not only biological types but also of human capital forming type. But there should be a high degree of complementary technical relations among them with regards to expanding output and employment. This shows that any change in technology requires capital investment. To repeat it again, the aim of that investment policy should be output (and employment) expansion, which depends on the average productivity of land and labour. Let us illustrate this relation with the following :

$$\frac{P}{N} = \frac{P}{L} \cdot \frac{L}{N}$$

$$\text{Then} \quad \Delta\left(\frac{P}{N}\right) = \Delta\left(\frac{P}{L}\right) \cdot \Delta\left(\frac{L}{N}\right)$$

The above shows that the productivity of land per acre (P/N) depends on the productivty per worker (P/L) and labour-land (L/N) ratio. The ratio of labour to land in a backward agricultural economy like India is always high because of excessive pressures of population on land which is limited in supply. Assuming that ratio as constant, the higher the ratio of P/L, the higher the ratio of P/N. Again P/L being equal to K/L, P/K, the output of land per acre also depends on capital-labour ratio (K/L) and output-capital ratio (P/K). The higher the ratio of K/L, the greater the productivity of labour per head (ie. P/L); and so the output of land per acre. An increase in capital ratio resulting from investment in new technology will raise the average productivity of labour because of an increase in the utilisation of idle mandays available to working rural labour in agriculture. Moreover, the farmer will also raise the output of land per acre on account of such changes. Therefore, the level of farm output per acre and per worker will in turn increase the productivity coefficient of capital invested as the relation of P/L to K/L and P/K shows. If quality-growing technological change is also taking place, the productivity of capital invested in equipments and other implements for agricultural purpose will rise in farming.

V. Implications

The choice of a new technology as discussed above may have the following implications :

1. growth of technological dualism,
2. uneven income distribution,
3. wage rise and increase in consumption, and
4. disincentive to farmers through fall in prices, if any.

The first and second implications of technological change are closely related to one another. By technogical dualism, we mean the creation of two regions—technologically developing and technologically backward—within the economy of the country. It also implies the creation of inter—farm disparity in the adoption of the change within a region. Raj (1969) has very ably discussed the issue of dualism which is created on account of changes in technology in agriculture. His observation is that 'the availability of modern technology leads very often to dualism in the agricultural sector rather than transformation of traditional agriculture' (Ibid, p. 37). Dualism is created because the introduction of modern technology cannot be made in all regions. Moreover, it cannot be adopted equally by all farmers. The Hirschman thesis of economic development (1958) shows that balances cannot be created in all sectors in the same proportion due to the existence of aggravating nature of the functional relationships among causal factors in growth. This is true when there is no control of the economy as a whole in the hands of the State.

Dantwala has very aptly refused the Raj hypothesis in his argument that 'the discovery of life-saving drugs can rightly be regarded as a revolutionary accomplishment, but currently it is perhaps guilty of generating 'dualism' in as much as it saves the lives of those who can afford the treatment and mockingly bypasses the millions of the poor' (1970, p. 181). The introduction of a new farm technology leads to dualism in the sense that it benefits those who apply it and deprives others of the benefits who do not adopt it. However, he feels that the spurt of modern technology, though it may create dualism in the first instance, will finally lead to the transformation of traditional agriculture. Hence Dantwala has, in fact, accepted the first version of Raj in part but finally rejects it.

Assuming that 'growth is unlikely to start everywhere at the same time and to proceed everywhere at the same speed within the economy as Hirschman (1957) says, the creation of dualism with the adoption of that technology may be held valid operationally. But the Indian experience of the Green Revolution shows that the adoption of new farm technology could not benefit marginal and small farmers because of the lack of resource constraints and the very existence of agrarian structure of production-land relations. As a result, not only technological dualism is created but also a wide gap of incomes between the rich and poor. It is a fact that the new situation which emerged after the early Sixties, shows the emergence of a new class of farmers, called capitalist. Hence the adoption of new farm technology has led to the gradual process of transformation of traditional Indian agriculture towards capitalism.

The third implication which may arise on account of technological change, is wage and consumption increase. It is argued that labour-involving technological change will raise wages and consumption which will adversely affect the process of capital accumulation. C. H. Hanumantha Rao (1972) has shown the case of Punjab agriculture where capital is substituted for labour because of rising wage rate of labour. The neo-classical hypothesis operates in an area where farming becomes commercially capitalistic in character. Thus the neo-classical fear is genuine but under the system wherein a few persons have control over the supply of land and other resources.

However, wage rise is essential in the economy where most of the people live below poverty line. This is also similarly essential in regard to consumption. The Leibenstein thesis of economic development (1967) points out that wage rise and efficiency increase are positively correlated. Rise in wages and consumption increases the efficiency of working force upto a certain point Pradhan H. Prasad (1967) has analysed that some optimum wage rate is required in order to maximise profit. Thus from the point of vew of production as well as welfare economics, wage rise is highly essentially and socially healthy. The author (1969) has also shown how wage rise and consumption increase will raise the productivity of labour in a double form.

It is also feared that technological change leading to high growth of agricultural output and surplus may cause price fall and this will result in disincentive to farmers. This case may be partly true in respect of Punjab agriculture in the context of its wheat output and profitability. However, the Indian case shows that agricultural prices have gone up many-fold with the spurt of new technology. The disincentives to farmers depend on the relative prices of commodities and inputs and their relative demand situation. The demand for agricultural output being much greater than its supply, the question of fall in agricultural prices does not arise. In fact, the prices of inputs with new farm technology have gone up high. However, the margin of profit is still high for farmers. Hence the disincentive part of the consequence of technological change does not arise.

All the above implications of technologial change are generally created because of the very agrarian structure of production-land relations which favours those who control it to a large extent. Assuming the agrarian structure as given, it becomes self-evident that investment policy, which aims at making choice between different alternatives of farm technology, should be correlated to policies for income distribution, wages, and prices. All these aspects of policy making should be integrated with a view to reducing disparities in incomes which exist in various forms. Thus the conclusion follows with the recommendation of the RBI report on a Framework for Incomes and Prices Policy : '......it will be useful to conceive of incomes and prices policy as an adjunct to investment policy, fiscal policy, foreign exchange policy or policy for institutional changes, etc' (1967, p, 10).

References :

1. Choudhary, D.P	1969	'Education of Farmers and Productivity' in the edited book of Measurement of Cost Productivity and Efficiency, NCERT, New Delhi.'
2. Dantwala, M.L.	1970	'From Stagnation to Growth', Presidential Address at the All

			India Economic Conference, Gauhati, 1870.
3.	Hirschman, A.O.	1957	'Policies and Dualism in Underdeveloped Countries', American Economic Review, September.
	———	1958	Strategy of Economic Development, Yale University Press.
4.	Horvat, S.	1958	'Optimum Rate of Investment', Economic Journal, December.
5.	Mishra, G.P.	1969	'Development Policy and Underemployment in a Labour Surplus Economy', Indian Economic Journal, Conference Number, December.
	———	1969	'Development Policy and Planning,' Economic & Political Weekly, May 24.
6.	Leibenstein, H.	1967	Economic Backwardness and Economic Growth, Science Edition.
7.	Prasad, P.H.	1967	'Growth in Macro Economic Perspetive', Economic and Political Weekly, April 1.
8.	Raj, K.N.	1967	'Some Questions Concering Growth, Transformation and Planning of Agricutlure in Developing Countries', Journal of Development Planning, No. I
9.	Rao, C.H. H.	1972	'Farm Mechanisation in a Labour Abundant Economy', Economic & Political Weekly, Annual Number.
10.	Reserve Bank of India	1967	Report on A Framework for Incomes and Policy.
11.	Schultz, T.W.	1970	'Transforming Traditional Agriculture,' Lyall Book Depot, Ludhiana.
13.	VVD & GGG	1970	'Statistical Measurement of Modernisation', Economic & Political Weekly, November 14.

(Continued from page 72)

policy of expenditure contraction. The reason is that due to the fall in output as indicated by the growing trend of idle capital capacity and idle manpower, government revenue is falling (plus the policy of various tax reductions to create incentive to the private sector) and on the other, government expenditure tends to rise to finance the swelling unemployment benefit bill. What was actually needed was a policy of increasing government investment expenditure to absorb the idle capacities which would have meant at the same time growth in real output as an antidote to inflation coupled with strict price freeze policy. Some economists would argue that this latter measure would affect adversely the private sector's incentive to invest. This might be true but this loss could be compensated by the increasing government investment. Moreover, the incentive to invest affect the private sector because of its expanding aggregate demand effect. What really matters in a depression inflation situation is the increase in aggregate demand, in real terms.

References :

1. Joan Robinson—What has become of the Keynesian Revolution, PP 1-3.
   J. M. Keynes—The General Theory of Employment, Interest and Money, PP 200-220.
2. OECD—Economic Surveys, New Zealand, April, 1975, PP 12-15.
3. Shpiro, E.—Macro Economics.
4. Rose, W. D.—Manufacturing Development Policy in new Zealand, 1958-1968 'Polices View Point' May, 1969, PP 57-60.
5. Maitra, P.—Relative effects of substitution and of demand expansion on imports in New Zealand, 'Economic Affairs,' 18(5) : 213-23 (1973).
6. The Economist, 2-8 October, 1976 PP 82-85.

A Note on Projections of Continental and World Population : An Application of a Modified Logistic Curve[a]

Venkareddy Chennareddy and Sheldon Schaffer[b]

Introduction

Economists, demographers, statisticians, government officials and the general public have all been concerned with population control in underdeveloped countries. This topic has attracted more attention in recent decades than earlier because of the intensity of problems created by an ever increasing population, especially in underdeveloped countries that are already heavily populated.

The World Bank[1] and the United Nations[2] have both projected population to the end of the century for various countries and the world to help member countries in the management of population problems and in economic planning. These agencies have independently projected population based on various assumptions regarding fertility rates, family planning, and health improvement programs in different countries. The two series differ widely, particularly because of differences in their subjective assumptions.

---

[a] Based on materials pertaining to anticipated population in foreign countries prepared for a report, 'Long-Range Projections of Water-borne Commerce for Mobile Harbor and Black Warrior-Tombigbee Waterway, Alabama', Final Report to Corps of Engineers, Southern Research Institute, March 1975.

[b] Venkareddy Chennareddy was Senior Economist at Southern Research Institute and is presently Acting Chairman of the Department of Economics, Talladega, Alabama, U.S.A. and Sheldon Schaffer was Head of the Economic Research and Planning Section of Southern Institute, Birmingham, Alabama, U.S.A.; Mr. Schaffer is currently Head of Health Systems Planning at the Institute.

[1] 'Population Planning', Sector Working Paper, World Bank, March 1972.

[2] 'World Population Prospects, 1965-2000 as Assessed in 1968', Population Division, Department of Economics and Social Affairs of United Nations Secretariat, December 17, 1970.

The purpose of the present article is to project population for each continent and the world to the year 2035 using the United Nations estimates and to indicate implicit upper limits to ultimate population size. For this purpose a slightly modified logistic curve is used to trace a growth path starting from the actual population in 1965. The traditional type logistic curve is estimated with the use of iterative procedures. The logistic proposed in this article, however, can be estimated without iteration. The proposed curve can be transformed into a type of function which can be estimated statistically with the use of the least-squares method. The projections based on this method and on the medium assumptions[3] of the United Nations regarding health and birth control planning programs in various countries aro then compared with the projections of both the World Bank and the United Nations.

The present method also provides a point of inflection in the population growth curve of each continent. The present method also provides an estimate of the implicit upper limit in the size of population in the various continents on the assumption that drastic and aggressive family planning programs are not undertaken.

METHODOLOGY AND DATA

Model

A modified logistic model was designed for projecting population in each continent, as follows :

$$P_t = \frac{\lambda P_o}{a+(\lambda-a)e^{-\lambda t}} = \frac{K}{1+\left(\frac{K-P_o}{P_o}\right)e^{-\lambda t}}$$

Where

P_t is continental population in the year t,

P_0 is continental population in the base year,

t is the time variable with a coded value of zero for 1965 and an addition of one for each subsequent year,

K is the eventual population in each continent,

$\left(\frac{K-P_0}{P^0}\right)$ is the ratio of the ultimate increase in population to the base period population, and

λ and a are the parameters to be estimated statistically.

[3] For some details about the assumptions on fertility in each country, see 'World Population Prospects, 1965-2000 as Assessed in 1968', Population Division, Department of Economic and Social Affairs of United Nations Secretariat, December 17, 1970.

The upper limit for the continental population is estimated as :

$$P_t = \left(\frac{\lambda}{a}\right) P^o, \text{ as } t \to \infty.$$

Turning Point

The point of inflection for the proposed logistic model is derived from the following equation[4] :

$$\left(\frac{a}{\lambda - a}\right) = e^{-\lambda t}$$

$$\therefore \quad t = \log_e\left(\frac{a}{\lambda - a}\right) / (-\lambda)$$

The year represented by the coded value as given by t in the above equation corresponds to the point of inflection in the population growth curve for each continent.

Estimation

This curve can be statistically estimated using the least-squares method by transforming the curve into a linear form with the reciprocal of the dependent variable and also the reciprocal of the independent variable lagged by one time unit. This can be shown as follows :

$$P_t = \frac{\lambda P_o}{a + (\lambda - a)e^{-\lambda t}}$$

$$\frac{1}{P_{t+1}} = \frac{a + (\lambda - a)e^{-\lambda(t+1)}}{\lambda P_o}$$

$$\frac{1}{P_{t+1}} = \frac{\left(a(1 - e^{-\lambda}\right)}{\lambda P_o} + e^{-\lambda}\frac{1}{P_t}$$

$$Z_{t+1} = A + BZ_t$$

where : $Z_{t+1} = 1/P_{t+1}$; $Z_t = 1/P_t$; $A = \frac{a\left(1 - e^{-\lambda}\right)}{\lambda P_o}$; $B = e^{-\lambda}$

The statistical model can then be written as :

$$Z_{t+1} = A + BZ_t + E_{t+1}$$

where E_{t+1} is an additive error term in the variable Z_{t+1}.

---

[4] It is derived by equating to zero the second derivative of the function with respect to the time variable.

Data

The population data for each continent for the estimation of the regression equation, $Z_{t+1}=A+BZ_t+E_{t+1}$, are taken from the United Nations report[5]. The United Nations uses an interval of 10 years in presenting its projected population for the period 1970-2000. The population data for five-year intervals were taken as an average of the projected population at the beginning and at the end of each ten-year period. The data for the five-year intervals starting in 1965 cover a total of eight time periods.

EMPIRICAL RESULTS

Population Projections

The regression equation $Z_{t+1}=A+BZ_t+E_{t+1}$ was estimated for the population of each continent for the period 1965-2000 with time intervals of five years. The total number of observations used is only seven because the data were lagged by one time unit. However, in two continents, Latin America and Africa, only six observations were used to obtain a better statistical fit. The regression coefficients, standard errors, and F values for each equation for each continent are given in Table 1. All the regression coefficients are highly significantly different from zero. Although they have a small degree of freedom, the F values of all regressions are also highly significantly different from zero.

The actual population in 1965 in each continent, the estimated parameters, the derived parameters, and the estimated eventual population in each continent are given in Table 2. The upper limit for the multiple of the initial—or base-year population for East Asia is the lowest of all other multiples, indicating that Japan and China, the dominant countries in East Asia, on the basis of present and planned programs, are expected to control their populations more effectively and rapidly than countries in other continents. However, this upper limit is only an approximation, not a precise prediction. The continental areas, in order of importance for achieving such control over population, are Europe, Oceania, U.S.S.R., North America, Middle Asia, South East Asia, Latin America, South West Asia, and Africa. According to the estimated equation and the anticipated net growth rate of population in the next 30 years, there is a greater chance for population to explode in Africa than in other continents, thereby requiring much more time for African population to reach zero growth. This may be attributable to the fact that excessive population pressure in Africa is generally not yet apparent and is not expected for sometime in the future. It is not improbable that for improbable that for sometime most countries in Africa will not implement aggressive family planning and birth control programs. Similarly, South West Asia and Latin America will take longer than advanced countries and East Asia to achieve effective control of population. According to the estimated results, Africa will eventually have the highest population of about 9.3 billion. Middle Asia will have the next highest of about 3.55 billion and Latin America will follow with 2.09 billion.

---

[5] 'World Population Prospects, 1965-2000 as Assessed in 1968'. Population Division, Department of Economic and Social Affairs of United Nations Secretariat, December 17, 1970.

Projected population and compound growth rates for the continents and for entire world are given in Table 3. Population in Africa was 303 million in 1965 and is projected to increase from 351 million in 1970 to 2.072 billion in 2035. The implied compound annual growth rate of population in Africa is projected to decrease from 2.99 percent during the period 1965-1970 to 2.44 percent during the period 2030-2035. Because its growth rate is not expected to fall substantially, Africa, as noted above, will dominate in population size. Similarly, eventual population in Latin America and in South West Asia are expected to be high relative to other continents. Population in Latin America was 246 million in 1965 and is projected to increase from 287 million in 1970 to 1.281 billion in 2035. The growth rate is expected to decrease from 3.13 percent in 1970 to 1.45 percent in 2035.

Population in Europe was 445 million in 1965 and was projected to rise to 462 million in 1970 and 687 million in 2035. The annual growth rate implied in the projection decreases from 0.76 per cent in 1970 to 0.48 per cent in 2035. The population in the Union of Soviet Socialist Republic is projected to rise from 243 million in 1970 to 441 million in 2035. The implied annual growth rate is expected to decrease in Oceania from 2.57 per cent in 1970 to 0.69 per cent in 2035 and is expected to decrease in North America from 1.38 per cent in 1970 to 0.84 per cent in 2035.

Because of high per capita income, high education levels, and considerable information dissemination in advanced countries, population growth rates there have been comparatively low and will continue to decrease. In underdeveloped countries, however, because of low per capita income, low levels of education, and lack of effective, aggressive, and massive programs for family planning and birth control, population growth rates have not yet decreased substantially. In Africa and Latin America, less than half the population lives under governments that are committed to reductions in national population growth rates. A lack of interest and absence of effective programs in various countries in Africa can be attributed mainly to the newness of the political structures and to ethnic rivalries in these states. In Latin America, the influence of the Roman Catholic Church tended to discourage strong expression of interest by government in reducing rates of population growth.[6] Such problems might have plagued the Asian countries, also, though not to the same extent or in the same manner. Population in South Asia was 67 million in 1965 and is projected to increase from 77 million in 1970 to 397 million in 2035. The population growth rate may be expected to decrease from 3.5 in 1970 to 1.90 in 2035. Population will increase from 0.766 billion in 1970 to 2.54 billion in Middle Asia in 2035 in South East Asia. The growth rate in population according to this method of projection is expected to decrease from 2.89 per cent in 1970 to 0.94 per cent in 2035 in Middle Asia and from 2.99 per cent in 1970 to 0.99 per cent in 2035 in South East Asia.

World population was 3.289 billion in 1965 and was projected to increase to 3.684 billion in 1970 to 10.665 billion in 2035. According to the projections in the study, world population will reach 6.593 billion in the year 2000, compared with the World Bank[7] "B" projection of 6.690 billion. On the assumption that family planning efforts will remain as modest than as they are at present, the United Nations medium projection[8] of world population in the same year, 2000, is 6.494 billion. The implied growth rate of projected world population in this study is expected to decrease from 2.29 per cent during the 1965-1970 period to 1.15 per cent during the 2030-2035 period.

Conclusions

A simple but modified logistic curve was developed to estimate the eventual population of each continent. A special feature of this modified logistic function is that it can be estimated statistically using the least square method, rather than using an iterative procedure.

According to the continental projections made in this study, Africa will eventually have the highest population of about 9.3 billion.

[6] Norton, Dorothy, 'Population and Family Planning Programs : A Fact Book', Population Council, New York, September 1972.

[7] 'Population Planning', Sector Working Paper, World Bank, March 1972.

[8] World Population Prospects, 1965-2000 as Assessed in 1968', Population Division, Department of Economic and Social Affairs of the United Nations Secretariat, December 17, 1970.

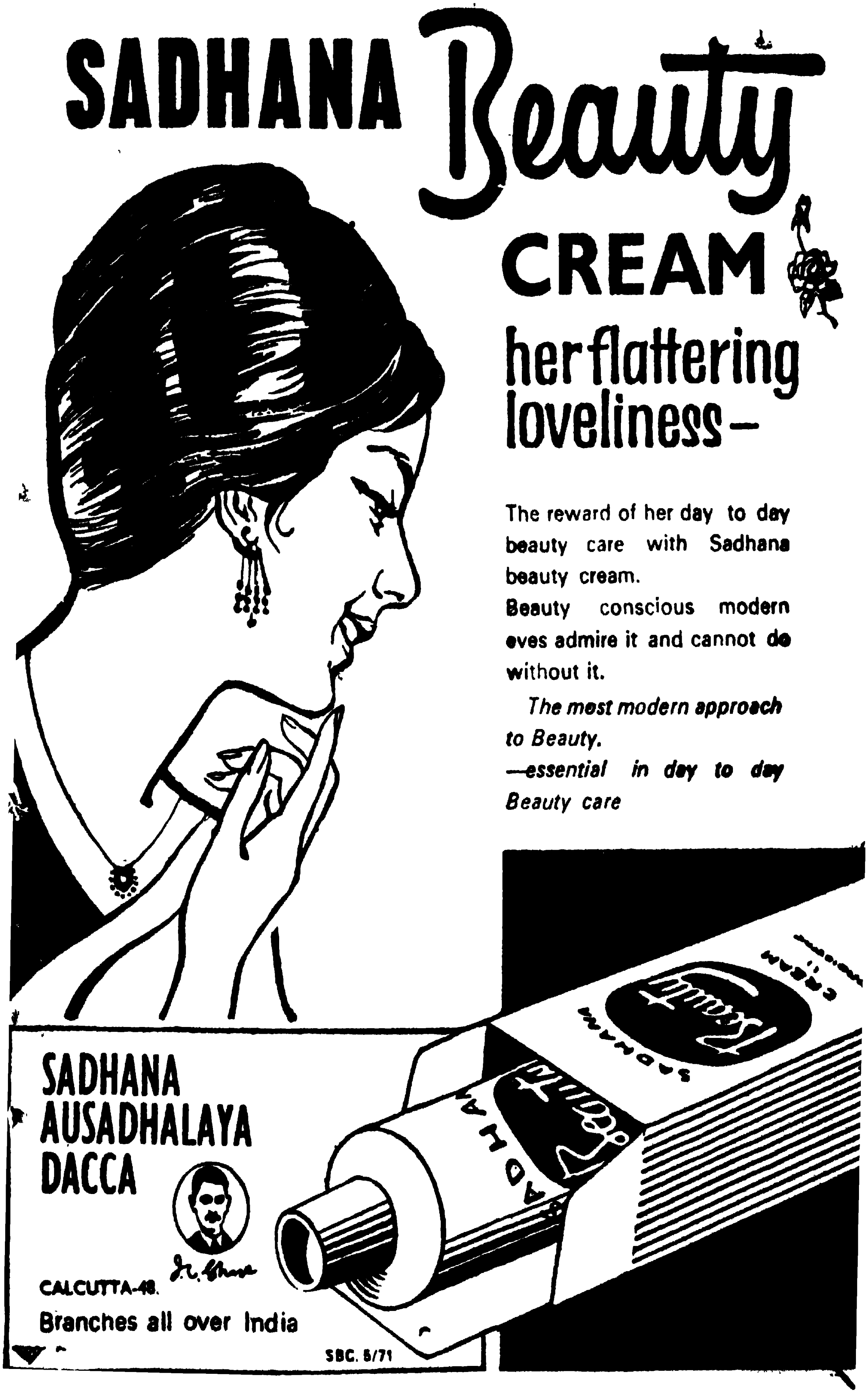
Middle Asia will have the next highest of 3.55 billion and Latin America will have 2.09 billion.

These projections of population are expected to be realised, if the individual nations in the concerned continents, especially Africa, Asia and Latin America, do not aggressively plan and implement family planning programs. The expected population growth in under-developed continents will serve as a serious obstacle in achieving greater material well-being in the future.

If resources in these countries or continents are not explored and harnessed at higher rate than population growth, per capita gross product, as well as per capita income, will decrease, thereby aggravating the vicious cycle of poverty. [Tables in next issue].

Bibliography

1. Berkson, Joseph, "Application of the Logistic Function to Bioassay" 'Journal of the American Statistical Association', 39, 357-65 Sept. 1944.
2. ———, "Approximation of Chi-Square by Probits and Logits" 'Journal of the American Statistical Association", 41, 70-74 March 1946.
3. ———, "A Statistically Precise and Relatively Simple Method of Estimating the Bioassay with Quantal Response Based on the Logistic Function", 'Journal of the American Statistical Association', 48, 565-99 (Sept. 1953).
4. Norton, Dorothy, 'Population and Family Planning Programs : A Fact Book, Population Council, New York (Sept. 1972).
5. Higgins, B., 'Economic Development', New York, W. W. Norton & Co., Inc., Revised edition 1968.
6. Johnson, Johny K., "A Generalized Logistic Function with an Application to the effect of Advertising", 'Journal of American Statistical Association, 68 (Dec. 1973).
7. Nelder, J. A., "The Fitting of a Generalization of the Logistic Curve", 'Biometrics', 17(1), 89-110 (March 1961).
8. Oliver, F. R., "Methods of Estimating the Logistic Growth Function", 'Applied Statistics', 13(2) 57-66 (1964).
9. ———, "Aspects of Maximum Likelihood Estimation of the Logistic Growth Function", 'Journal of the American Statistical Association', 61 (3) 697-705.
10. ———, "Another Generalization of the Logistic Growth Function", 'Econometrica', 37(1), 145-47 (Jan. 1969).
11. Simmons, G. B., 'The Indian Investment in Family Planning', The Population Council, New York, 1971.
12. Theil, Henri, 'Economics and Information Theory', Chicago : Rand McNally & Co., 1967.
13. United Nations, 'World Population Prospects, 1965-2000 as Assessed in 1968' Dec. 17, 1970.
14. World Bank, 'Population Planning', Sector Working Paper (March 1972).



SADHANA Beauty CREAM

herflattering loveliness –

The reward of her day to day beauty care with Sadhana beauty cream.
Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.
—essential in day to day Beauty care

SADHANA AUSADHALAYA DACCA

CALCUTTA-48.
Branches all over India

SBC. 8/71

Annual

Inland Rs. 30.00 (Net)

Foreign US $10.00

Postage by surface
US $2.00

This Copy Rs. 5.00

REGISTERED NO. WB/NC 80
R. N. No. 5182/57

Published by H. Roy from 10, Galiff Street, Block 5, Suite 64, Calcutta-3 and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh Lane, Calcutta-6. **Editor : Himansu Roy. Phone : 55-0477**

ECONOMIC AFFAIRS

- Towards an Understanding of a Developing Economy : A Case Study of Ghana—I
- The New Zealand Economy in Crisis
- Debt Position of Punjab Cultivators after Green Revolution
- "Food with Freedom" Reviewed

VOL. 22, No. 3 MARCH 1977

Revised Annual Subscription Rates :

India : **Rs. 30.00**
Foreign : **US $ 10.00**
Postage : **$ 2.00** (by surface)
Single Copy (ordy.) **Rs. 2.50**

Outstation cheques shall bear Rs. 5.50 extra.
Effective from January 1977.

Sd/ M. ROY
15 September 1976 *Manager*,
Economic Affairs

ECONOMIC AFFAIRS

Phone 550477

10, Galiff Street, Block 5, Suite 64, Calcutta 700003

Established in 1956

Monthly Journal of Advanced Theoretical and Applied Economics

Advertisement rates

	Casual		Contract	(Minimum six insertions yearly)
Front Cover	400/-		350/-	
Second Cover	275/-		225/-	
Third Cover	225/-		175/-	
Fourth Cover	250/-		200/-	
Full Page	215/-	(DAVP Rate)	175/-	
Half Page	115/-		85/-	
Quarter Page	75/-		60/-	

Special position 25% extra. Additional colour 25% extra.

Mechanical Data

Area

Size	Printed
24 × 16 CM	18 × 11CM
(9½" × 6½")	(7½" × 4½")

Halftone Block up to 65 screen : Matrix not accepted

SPACE ORDER

Advertisement Manager,
Economic Affairs,
10, Galiff Street, Block 5, Suite 64,
Calcutta 700003, India.

Phone : 550477

Dear Sir,

We/I do hereby book..................................pages/enter into an/a..................contract for which We/I agree to pay Rs...............

The order will operate from..........................to..............................

Yours faithfully,

Special Instruction

....

Signature.......................

Address..........................

Dated..............

The order is accepted

Dated.................

Advertisement Manager

Economic Affairs

Contents

Editorial

91 Food with Freedom: Reviewed

94 Letter to the Editor

Feature

96 Prices and Employment in India

Articles

Ranen Ghosh
97 Towards an Understanding of a Developing Economy: A Case Study of Ghana—I

P. Henderson
105 The New Zealand Economy in Crisis

Rajinder Singh
110 Debt Position of Punjab Cultivators after Green Revolution

Rachhpal Singh
116 The Impact of Tractors on Land Development and Expansion of Irrigation

A. C. Gangwar and M. V. George
119 On Current Evaluation of Crash Scheme for Rural Employment in Haryana

ECONOMIC AFFAIRS

Volume 22 March 1976 No. 3

Food with Freedom : Reviewed

In India in the pitch of the general election for capturing the State machinery two decisive political parties have raised two slogans which have a general application in the Third World. The newly formed Janata Party's slogan is : "Food with Freedom". The Congress has no positive slogan : it just attempts to counteract the slogan of its opponent by the slogan : "Stability and Unity". This negativity is borne out of its experience with the practice of "food with freedom".

The Nehru-led Congress Government gave the leadership to the socio-political philosophy of "food with freedom (democracy)". But it was found that it could neither deliver 'food' nor assure 'freedom' to the people. Mr. Nehru's expected flow of 'food' logically ended in stagflation and 'freedom' in ~~her~~ his daughter's (Mrs. Indira Gandhi, the present Prime Minister) progressive mounting to the height of absolute authority.

Mrs. Indira Gandhi's authoritarian way logically led to the repression of economic laws and strategic propagation that the economy had regained its normal state of health that would now go to building the socialist state of her own concept. But such is the force of economic laws that the repression could not hold them up for long and the ills that had once developed in the economy began to show their ugly faces again before which she pleaded almost helplessness. A Reserve Bank of India source states that notes in circulation increased from Rs 7027 crores in May 1976 to Rs. 7151 crores in October 1976. Industrial production (1970=100) showed a fall from 132.4 in May 1976 to 128 9 in September 1976. Wholesale price of all commodities (1961-62=100) registered an increase from 292.3 in May 1976 to 312.1 in October 1976 ; the sharp rise of price index of food articles during that period was remarkable—from 318.4 to 344.3. The foreign exchange reserves recorded a fall after reaching the all-time peak of Rs 2265 crores in August 1976, and after a long period of favourable balance of trade September 1976 saw a deficit of Rs 6 crores. The concerning fact is that the number of unemployed in live register rose from 9535000 to 9639000 during the period covering only 6 months, May 1976 to October 1976. The rise of unemployed is also attributed to closures of a number of units in growth industries. Things have not changed much by this time. The money supply till February 18 rose by Rs 2038 crores or 16.1 per cent against Rs 927 crores or 8 per cent last year. The Finance Minister admits prices rose by 15.5 per cent between March 1976 and February 1977. 1975-76 growth rate of 8 per cent is anticipated to, fall to 5.5 per cent in 1976-77. The growth of foreign exchange reserves to Rs 2500 crores is a welcome increase. But conveniently the social cost involved in it is overlooked. So also its unstable character and the explosive price and demand structure of the current world market. Still more is the silence over the correlation of the rise in foreign exchange reserves and the determined rise in prices, and curiously the rise in unemployment.

To be sure, in a developing country the experiment of the philosophy of "food with freedom" is bound to decompose in authoritarianship that destructs both the economy and the authoritarians. It will be a hopeless attempt for the authority to survive decomposition by raising the bogey that "stability and unity" are in danger. The effect is no cure to the cause.

Some developing countries may still venture to say that they have ensured "food with freedom". But it is an open fact that the flow of their morsel 'food' springs from the political interest of a patron country and their 'freedom' is the thought-product and tilts of the same country. The 'food' they taste is bitter and the 'freedom' they enjoy is bondage.

Attempts are made to establish that the recent growth of West Germany and Japan is on the tract of "food with freedom". The initial mistake here that has to be rectified is that neither of these countries had ever belonged to the concept of Third World. They are like phoenix. War touched them but could not crush them. They had however to taste for some time the bitter food and freedom in bondage. Their relative small sizes and populations provide edges as well.

Outside the non-communist world China has given national food (no matter how morsel) to *all* her people. She has however to deny freedom to them just the USSR, for that matter any non-democratic country, had denied. For their way is the way of dictatorship.

Thus the contemporary history tells us that the way to rapid, balanced and social justice assuring all-round development for a developing country is to choose either 'food' or 'freedom', not both. This is a dangerous assertion. For 'freedom' is the essence of life. It cannot be traded off for any value save for itself. It cannot be directed to wait till the higher stage of economic development comes. This painful contradiction between 'food' and 'freedom' at a lower stage of economic development can be removed by democratic alienation of one's right to freedom to the State. The alienation must have the social promise that the Government shall be a people's government to work for the cause of the people and as a test it must have *all* support of almost *all* the people as one which we had once seen in Nehru Congress Government and another in Mrs. Indira Gandhi's. Such Government is certainly an authoritarian Government of the people in a democratic system, taken in any rigorous Western sense of the term. But 'authoritarian Government' and 'authoritarian way' are not the same thing. A democratic authority is a sacred trust of the people but the authoritarian way is born out of hatred for the people and of a strong feeling of personal, family or divine right to *absolute power* over the people.

A democratic developing country's actual and anticipated fear of political instability and economic indiscipline can thus be removed through the people's authoritarian Government. And as the economy works to flow out national food to all, the State shall continue to re-alientate the vested 'freedom' with more and more re-education of the people in the high principles of democratic and human values that shall have their finer synthesis with the living values of the national heritage. This refers to an advantage of a developing country having ages of civilization. For it can synthesised modernities with living national classics ; materialism as form and spiritualism as content. The advanced countries have become bewildered on their narrowing road to material prosperity. They have no way back until a new system, that will invariably come out of a practised thought of a developing country having rich heritage, is presented before them as either-or. The 'or' being the death-trap.

Letter to the Editor

Sir,

I am writing to tell you that I have now been receiving your magazine for several months, and I find it most interesting and stimulating.

I have been taking a number (about 20 actually) of political and economic magazines for some 15-20 years now from all over the world, including China, USSR, USA, Yugoslavia, India, and on. I have always attempted to obtain a balanced view—Capitalism, Socialism/Communism, the developing world, and so on.

Some magazines tend to go unread from month to month and must eventually be stopped. Others are read "reluctantly" when there is nothing else ! I know that yours is a success as far as I am concerned because it is always read on arrival, then re-read. Finally it ends up with many pencilled comments and counter-arguments in the margins—a sure sign of appreciation ! I would mention three features in particular.

First, your magazine does not take the totally erroneous view of some economists that the "pure" science of economics can remain separate from and "un-contaminated" by politics. Politics and economics are inseparable, and must be treated together. Take Britain at the moment : who can deny that the power relativities between Trade Unions, Managements, and government (a purely political issue) are the factor most influencing our economy, and inflation in particular, at this moment ? Your magazine always allies politics with economics, and thus gives the right perspective. Indeed, your political thoughts are most interesting in themselves—your "Thoughts on Amendments of Constitution" (June 76) could well be reprinted in toto as an editorial in a British daily, for the issue, though not so immediately pressing, is by no means settled here.

Second, I personally believe that economics as a science is useful only in so far as it guides and benefits everyday economic life. The monetary and other aspects of economics, and the political aspects of income distribution etc can only be judged as success or failure in terms of overall standard of living. Too many articles are written by theorists for theorists; your articles always relate theory to practice. Furthermore, seen in terms of real-life success, politics and economics have a pretty dismal record world-wide; your magazine is not afraid to be radically critical.

Third, the articles you publish are always reasonably short and to the point. Too many writers feel that they can "think aloud"—working out their reasonings as they go along. This is one of the deadly sins in my view! The reader is often far too busy to follow such mental perambulations, and I am quite sure that many good points are missed due to loss of patience during an article which, if only it had made its points quickly and clearly, might have been valid and significant.

Once again I thank you for your stimulating magazine, and I wish you, your staff and the magazine every success.

Wales, February 21, 1977

Yours sincerely,
D. M. Meacock

Declaration about the Newspaper

1. Place of Publication : Calcutta
2. Periodicity of its Publication : Monthly
3. Printer's Name : Himansu Roy
   Whether citizen of India ? : Yes
   Address : 10, Galiff Street, Block 5, Suite 64, Calcutta 3
4. Publisher's Name : Himansu Roy
   Whether citizen of India ? : Yes
   Address : 10, Galiff Street, Block 5, Suite 64, Calcutta 3
5. Editor's Name : Himansu Roy
   Whether citizen of India ? : Yes
   Address : 10, Galiff Street, Block 5, Suite 64, Calcutta 3
6. Name and address of individual who own the newspaper and partners or shareholders holding more than one per cent of the total capital : Uma Roy

I, Himansu Roy, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd./ Himansu Roy
Publisher

Dated 10. 2. 77

Prices and Employment in India

Index Numbers of Wholesale Prices

(New Series)
(Base : 1961-62=100)

Year/Month	General Index (All Commodities)	General Index (All Commodities) Converted to old Base 1952-53=100
1975—		
November	303·2	379·3
December	294·4	368·3
1976—		
January	290·0	362·8
February	288·3	360·7
March	282·9	353·9
April	288·5	360·9
May	292·3	365·7
June	296·3	370·7
July	308·6	386·1
August	310·0	387·8
September	313·5	392·2
October	312·6	391·1
November	311·9	390·2

Employment Service Statistics

Year/Month	No. of applicants on the live register at the end of the period (000)
1975—	
October	9,274
November	9,315
December	9,326
1976—	
January	9,397
February	9,422
March	9,353
April	9,380
May	9,535
June	9,609
July	9,744
August	9,625
September	9,639
October	9,587

Towards an Understanding of a Developing Economy : A Case Study of Ghana—I

Ranen Ghosh[*]

This essay on national income and money supply in Ghana is characterised by not being too ambitious to be devoid of pragmatism. I believe that the simple models—as used in this study—have been successful in bringing out salient features of the Ghanaian economy. This study will have very important bearings on the development of economic theory for undeveloped economies.

Technology of the Ghanaian Economy

Table 1 shows the basic data. Gross Domestic Product (G.D.P.) measured at constant prices of 1960 rose from 956 million cedis in 1960 to 1190 million cedis in 1969. In response to this rise in G.D.P. money supply showed an increase of 142.1 million cedis during the same period. A rough and ready indicator of the relative rises in G.D.P. and money supply might be straightforward percentage changes during the period 1960 to 1969. They were 24.47% and 138.09% rises for G.D.P. (at constant prices) and (average annual) money supply. Thus money supply showed disproportionately steeper rise than G.D.P. showed. A better indicator of the relative rises of these two variables is the growth rate. During the period, G.D.P. showed an average growth rate of 1.06% per year as compared to an average growth rate of 9.29% per year for money supply. Thus real income as measured by G.D.P. at constant prices shows far less variation than money supply. It will be shown that real income is one of the determinants of money supply in an underdeveloped country like Ghana. In the determination of money supply, two sets of forces, one set on the supply side, the other set on the demand side, are to be considered. The other determinant for money supply is G.D.P. at current prices. G.D.P, at current prices showed substantial rise during the period of 1960 to 1969. The straightforward percentage change for this variable is 143.51% ; the growth rate as calculated for the period is 10.14% per year. This indicates that money supply grows at similar rate to that of money income (i.e. G.D.P. at current prices).

---

[*] Institute of Statistical, Social and Economic Research, University of Ghana, Legon, Ghana.

Money supply in narrow sense includes demand deposits and currency components, their relative shares in the total money supply being, on the average, 50.95% and 49.05%. Thus currency component of money supply holds a big share. This has deep economic implication, as will be explained in due course of this study. In an underdeveloped country, money supply shows prominent seasonal fluctuations which follows the patterns that its agricultural sector experiences. For Ghana, it has been shown elsewhere [Ghosh, 1] that the currency component shows very prominent seasonal fluctuations as compared to those experienced by the demand deposit component. In this study, however, there is no scope of the analysis of the seasonal variation of these components, since the models formulated in this study are based on annual data of the relevant variables.

Price level is measured as the ratio of G.D.P. at current prices to G.D.P. at constant prices. This is called implied price level. Implied price level showed a rise of 95.63% during the period. Its growth-rate is estimated at 8.01% per year. This growth-rate of price-level is quite high when compared with that of real income. Whether these growth-rates are indicative of causal relation in the context of economic development will be critically examined below.

The components of G.D.P. for Ghana are taken as follows : Agriculture, Mining, Manufacturing, Construction, Oil and Fuel, and Transport and Services. [See Table 3, Appendix]. This table broadly explains the structure of the Ghanaian economy. In 1960, the share of Agriculture in G.D.P. was as high as 51.8% whereas Manufacturing held a meagre share of 1.9%. In 1968, the share of Agriculture in G.D.P. came down to 38.6% and that of Manufacturing rose to 7.6%. Notice that the share of Transport and Services in G.D.P. rose to 45.7% in 1968 from 38.0% in 1960. In an underdeveloped country where industrial sector holds a small share in the entire economy, the bulk of G.D.P. is generated in agricultural sector and in the sector of transport and services. This holds good for Ghana also. The percentage chage of agricultural income measured at current prices in

Ghana is found to be 100.73%, whereas, as shown above, G.D.P. at current prices showed a rise of 143.51% during the period of 1960 to 1969. This proportionately less change in agricultural income may be accounted for in at least one of two ways : agricultural product gross less than total G.D.P., other things like price-level remaining the same, or agricultural product may have grown, but price differential between agricultural sector and industrial sector, roughly speaking, is unfavourable to the agricultural sector.

The ratio of money income, that is G.D.P. measured at current prices in this study, to money supply measures income velocity of circulation of money. For Ghana, the data on income velocity of circulation of money are given in Table 1, for the period of 1960 to 1969. The average velocity of circulation of money for this period is 7.08. For an underdeveloped country like Ghana this figure is quite high. Generally speaking, income velocity of circulation of money for a country is higher, the higher the stage of economic development this country stays in. Highly industrialised countries have higher income velocity of circulation of money than less industrialised countries. In measuring income velocity of circulation of money, money income in the numerator of this ratio is that income which is subject to the use of money. In an underdeveloped economy, all of national incomes are not subject to the use of money and are to be excluded from the numerator. Thus income velocity of circulation of money comes down. It is the measurement problem which such countries experience so that measured income velocity of circulation for a country, specially for an underdeveloped country, is to be treated with great caution.

One of the conventional indicators of econmic development is per capita income for a country. Table 2 shows variation of per capita income at constant prices. As the data indicate there is little variation in per capita income during this period. Its percentage change during this period is 1.2%, that is, per capita income has decreased during the period. However, a careful scrutiny of the data reveals that per capita income rose during the first four years of this period, after which it fell steadily. Only in the last year of the period it shows the sign of revival. As has been shown above, G. D. P. at constant prices in Ghana showed an average growth rate of 1.06% per year, whereas population in Ghana is rising at a growth rate of 2.6%. So, it is natural that per capita income will have a negative growth-rate. However, if the sign of revival for per capita income in the last year of this period serves as an encouraging hint, per capita income should increase in future. This can be checked with data when they are available for subsequent years. It should be noted that there is measurement problem for per capita income. Per capita income is defined as $x_t=\frac{y_t}{R_t}$, where x_t is per capita income, y_t income at constant prices and R_t is population, all in period t. Data on R_t are usually generated by the following formula, which though simplest, is not unrealistic for our purpose : $R_t=R_0(1+g)^t$: where R_0 is initial population and g is (average) growth rate of population. Then, per capita income can be expressed as follows :

$x_t=\frac{y_t}{R_0(1+g)^t}$. In this expression, the denominator is a trend equation : $R_t=R_0e^{ht}$, where $e^h=1+g$. Since, the numerator is not usually a trend equation, the measurement of per capita income as obtained by using the above expression is misleading. A suggestion is that y_t is taken as a trend equation. On this line, per capita income would be as in Table 4, Appendix.

Compared with the data in Table 2 for per capita G.D.P., the computed data in Table 3 show a steady rise of per capita G.D.P. during the first four years as in Table 2 after which there is a steady decline with per capita G.D.P. reaching the bottom, as it were. In Table 2 per capita G.D.P. in the last year, that is, in 1969 is higher than that in the previous year, whereas in Table 4, per capita G.D.P. in 1969 is not quite different from that for 1968. Data in these two tables cannot be regarded as similar. There are further implications of this measurement problem for econometric analysis. In a regression analysis, economic models most often are formulated with trend-free variables, if time-series data are used for such an empirical study. Per capita income then will pose a unique problem if it is one of the variables intended in the model. How can this variable be made trend-free ? Upto now, I have no answer.

An investigation into the interrelationship between the agricultural sector and the industrial sector of the Ghanaian economy would be relevant in understanding the nature of its structure. An input-output framework would be an ideal vehicle of information in this line. In an input-output analysis a triangular table indicates the independence of industries on industries written below them successively down the rows of the table. There is no authentic study on input-output analysis for Ghana. To me it seems that there is no prominent interrelationship between the agricultural sector and the industrial sector of the Ghanaian economy. If this is true it has deep economic implication. In the following section, I have revealed some important aspects of the structure and functioning of the Ghanaian economy.

A Model of the Monetary Sector

A simple model is formulated for the monetary sector of Ghana. In this model, an attempt is made to explain the determination of money supply.

Supply of Money : $N_t = a_0 + a_1 y_{t-1} + u_{1t}$ ... (1)
Demand for Money : $N_t = b_0 + b_1 y_t + u_{2t}$ ... (2)
Price Equation : $P_t = c_0 + c_1 y_t + u_{3t}$ ... (3)
Identity : $Y_t = P_t y_t$ ... (4)

Equilibrium Condition : $N_t^s = N_t^d$. (5)

where the variables are :

N_t=money supply in period t.
y_t =G.D.P. at constant prices in period t.
Y_t=G.D.P. at current prices in period t.
P_t=Implied price-level in period t.
U_{it}=Stochastic term.

Since time series data are used for the period 1960 to 1969, all the variables have been treated for trends. The trend equations are as follows :

(A) For N : $d_0 + d_1 t$
(B) For y : $j_0 + J_1 t + j_2 t^2 + j_3 t^3$
(c) For Y : $f_0 + f_1 t + f_2 t^2$
(D) For P : $k_0 + k_1 t + k_2 t^2$

All the variables in Equations (1) to (3) are trend-free variables. The first equation gives the supply function of money. The supply of money (N) is a function of gross domestic product (y) lagged by one period. The supply of money in current period depends on real gross domestic product (i,e., gross domestic product at constant prices) of the past period. If real gdp rises in the immediate past, supply of money rises in the present.

That supply of money depends on real gdp—and as a matter of fact, on real gdp of the past—is a finding of great interest. Supply of money for an economy would be taken as dependent on the monetary liabilities(Z) of its central bank.[1]

(a) Supplp of money : $N = mZ$.

where m is money multiplier. This equation is, in fact, derived from all these following relations :

(b) $N=d_1+c$: d_1=demand deposit; c=currency
(c) $Z=r+c$: r=bank reserves
(d) $r=k(d_1+d_2)$: d_2 time deposit, k=constant
(e) $c=ld_1$: l=constant
(f) $d_2=nd_1$: n=constant

Using these equations, the following can be obtained :

(g) $d_1=\frac{1}{k(1+n)+l}Z$

(h) $c=\frac{l}{k(1+n)+l}Z$

(i) $N=\frac{1+l}{k(1+n)+l}Z$, where m in (a) above is $\frac{1+l}{k(1+n)+l}$.

The equation (i) embodies the interaction between the supply of and demand for currency and bank reserves and shows the equilibrium situation. Now on what factors does each of the constant, k, l and n, depend ? l depends on public's preferences for currency against demand deposits, which in turn is affected by interest rates, income and by long-term variables like degree of monetisation, the growth of the banking sector and income distribution. The constant, n, is mostly affected by interest rates paid on time deposit and the interest rates in the unorganised money market. The constant, k, is likely to depend very much on the reserve requirements for demand and time deposits, because, commercial banks in an underdeveloped economy are anxious to expand their loans to the maximum level permitted by their reserve assets. The factors which determind size of central bank's monetary liabilities (Z) are central bank credit to government, central bank credit to commercial banks and central bank net holdings of foreign assets. The first sector is strongly influenced by the government's budget and is beyond the control of the central bank. The second factor is in the control of the central bank. The third factor is affected mainly by the fluctuations of the external position of the economy, like changes in exports, imports and (external) capital movements. The monetary authorities of an underdeveloped economy have little credit influence on these variables.

So, the conclusion is that the determinants of the stock of money, except perhaps k ratio, are beyond the control of the monetary authorities of an underdeveloped country. Supply of money in such an economy depends on income, interest rates and wealth. I have taken income as the most important factor affecting supply of money.

Interest rates in an underdeveloped economy play a curious role in the determination of the stock of money. This variable is more relevant, if it is so at all, in determining the demand for money in an economy. Similarly, wealth might play a prominent role in the determination of the demand for money. The role of these two variables in an underdeveloped money market must be assessed carefully. It will be shown below that these two variables are not so important in influencing the determination of stock of money in an underdeveloped economy. They may be held so much responsible in a developed economy, but are not so important for an underdeveloped economy—at least if one confines one's attention to pragmatic analysis where empirical data are used.

In equation (1), supply of money is taken as dependent on income of the past. This is supported by empirical data for Ghana. It emphasises that the monetary authorities have to watch the movements of gdp of the past period in order to determine the supply of money in the period.

Equation (2) is the demand function for money. The demand for money depends on monetary income Y without lag. This incorporates the transactions demand aspect of the Quantity Theory of Money. It would be tempting for one to include liquidity preference aspect of the so-called celebrated Keynesian model. Liquidity preference theory is mostly inapplicable to an underdeveloped economy like Ghana. In Ghana the money market is not well developed. It is mainly an unorganised market where money lenders, traders, and perhaps landlords, operate. They may be responsible for the supply of credit requirements of the agricultural sector. This unorganised market is directly out of control of the central bank. From an empirical point of view, the study of such an unorganised market is beyond the scope of this study. The organised market consists of central bank, commercial banks and financial intermediaries like insurance company, various cooperative credit societies, etc. The relative importance of these two markets can be measured by the ratio of currency to total money although it is not an efficient indicator. For Ghana, this ratio was 76.8% in 1950 and 54.5% in 1969. It indicates that commercial banks in Ghana have relatively less control on their demand deposit, since demand for currency, which is one of the components of the bank reserve, by the public is relatively quite high. Accordingly, the portfolio selection by this banks is limited, so that the scope of substitution between liquidity and semi-liquid assets depending on prevalent interest rates, is relatively insignificant, when the whole of the economy is taken into account. This holds good for other financial intermediaries operating in the organised sector of the market. So far as the public is concerned, their demand for money is little affected by the prevalent rate of interest. This is attributed to lack of knowledge on their part and to inertia. It is not true that a member of the public shift his currency to long-term deposit because rate of interest is relatively high—it is due to his lack of knowledge that his idle money could earn interest and is due to his inertia not to change his mind. Similarly, he lacks that much initiative to swap currency for real wealth—how much command of real wealth in the shape of desirable consumers' goods, he has in the market is an interesting question—whenever he sees that his currency is losing value due to rise in price level. And, I belive that the role of interest rates and real wealth in determining the stock of money in an underdeveloped economy is unimportant. In an empirical analysis where the variation in the stock of money is attempted to be explained by specific variables, the changes in money supply cannot be effectively explained by changes in interest rates because of the following reasons: The rates of interest in the organised credit market are maintained far below the equilibrium rates, although there is shortage of capital in an underdeveloped economy, 'through the imposition of ceilings and implementation of combination of selective and discretionary control on credit and concessionary finance. [Park, 2]. There is no spontaneous change in rate of interest to which the holder of liquidity will react.

APPENDIX A Table 1

Year	Gross Domestic Product (Cs. Mill.)		Money Supply	Demand Deposit	RATIOS		
	At constant prices	At current market prices	Annual average Cs. million	Annual average Cs. million	Income Velocity (2)÷(3)	Implied Price (2)÷(1)	%(4) ÷(3)
1960	956	956	102.9	45.6	7.1717	1.0000	44.3
1965	1112	1608	227.9	112.3	6.6944	1.4460	49.3
1966	1113	1793	223.9	120.6	7.2385	1.6109	53.9
1967	1133	1778	219.7	127.9	7.3775	1.5692	58.2
1968	1149	2067	232.3	131.1	8.0616	1.7983	56.4
1969	1190	2328	245.0	133.6	8.0442	1.9563	54.5
Sample average	1085.2	1521.1	185.97	94.77	7.0806	1.3829	49.74

The New Zealand Economy in Crisis

P. Henderson*

Introduction

Twice in a decade or so the New Zealand economy has plunged into a serious balance of payments crisis. The present author, writing in 1969 commented : "......in the light of the current economic crisis it seems that the ability of the Government to insulate the economy from major export price fluctuations may well be much more limited than in the past."[1] The past referred to in the question was the period from 1964-66 when the New Zealand economy showed a remarkable stability with respect to levels of employment. The first major balance of payments crisis, that of 1966-9 was triggered off by a sharp fall in wool prices, which caused the Government of the day to introduce a series of deflationary budgets. Under these policies the registered unemployed rose to a peak of about twelve thousand in 1968, this figure representing less than one percent of the total labour force. Even so, by the standards of the preceding twenty years this did represent a sharp increase in the unemployed, in that, in preceding years notified unemployed was a few hundreds at the most. The official figures slightly underestimate the real totals since married women do not normally register, not being entitled to unemployment benefit. Nonetheless, the experience of 1966-8 gave cause to seriously consider the long run likelihood of New Zealand maintaining her unparalleled levels of employment in the face of uncertain export receipts. In the light of the recent crisis the question arises once more of whether the economy is going through a temporary difficulty or whether the severity of the present balance of payments crisis indicates a serious structural problem. It is the view of the present writer that the latter is the case.

---

* University of Otago, New Zealand.

The Balance of Payments Crisis

The accession to power of the Labour Party in November 1972 happened in an encouraging economic atmosphere. As a result of a very sharp rise in export prices for New Zealand primary products, the balance of payments position looked very strong indeed. By August 1973 the official holdings of overseas reserves reached a thousand million dollars (NZ) and this gave New Zealand a very high ranking of holdings per capita as compared with the rest of the world.

One effect of the high level of export receipts was to encourage the manufacturing sector and the new Government to expand manufacturing investment and output at a very high rate. The expansion probably started before the election of November 1972 since the preceding Government had already instituted a series of expansionary measures. There is little doubt, however, that the rate of growth of manufacturing in the year to March 1974 was higher than that had been anticipated, at a figure of 9 percent. In fact the pattern of the 1972-3 boom was a familiar one in New Zealand. A rise in export receipts from primary products followed by a boom in manufacturing financed by running down the new reserves. It is crucial to remember that despite the large growth of manufacturing in New Zealand in the post-war period even now manufactured exports only earn approximately 20 percent of total export earnings currently and there are reasons for thinking this relatively high figure will shrink.[2] The boom coincided therefore with a rapid run down of overseas funds and to add to the danger, it was clear by the beginning of 1974 that a sharp break had occurred in the prices of primary exports. Worse, since both visible and invisible payments overseas were geared to the continuing world inflation, the price level of imports of goods and services went on rising whilst that of exports fell absolutely. The result was that New Zealand was caught in a price scissors of unexpected severity. Between June 1973 and June 1975 the terms of trade shifted from 124 to 69.

Apart from the seriousness of the balance of payments situation there were other factors which operated to complicate the problem of applying an effective stabilisation policy. In essence, the New Zealand export system works financially by requiring exporters to sell their overseas earnings to the Government account with the Reserve Bank. These sales are matched by the creation of demand deposits held by the export sector which become part of the internal money supply. The rapidity of monetary expansion in 1972-4 matched the rise in export receipts as might have been expected. Between the second quarter of 1972 and the third quarter of 1973 the New Zealand money supply grew by 36.2 percent.[3] It is not necessary to enter into the details of the Keynesian/Monetarist controversy to accept that such an expansion of money supply backed by power to import was likely to produce the fast rate of growth that occurred. What is more striking is the rapidity with which the economy moved from an apparently secure balance of payments surplus to a massive deficit. In the financial year to March 1973 New Zealand was in a position to pay off overseas debt to the extent of 119.5 million dollars (NZ). Two years later net borrowing was 246.1 million dollars (NZ) and, for the year ended March 1976, 287.1 millon.[4] The difficulty that successive Governments have had in cutting expenditure can be estimated from the internal budgetary deficits. By March 1975 the amount of Government expenditure to be financed from borrowing had risen to 11.4 percent. At March 1976 the figure was 22.8 percent. In the interim, between the two dates, there had been a change of Government (November 1975). The new Prime Minister, the Hon. R. Muldoon had run an election campaign focussed largely on the balance of payments problem and the state of the economy generally. Despite strenuous attempts to cut expenditure the first full budgetary statement of the new administration (July 1976) predicted a budgetary deficit of 18.4 percent for the current financial year. There are distinct signs that primary commodity prices are once again rising and it may be that this year will see some amelioration of the balance of payments difficulties. So far Governments have sought to meet the shortfall in the balance of payments by heavy borrowing abroad. This seems to have been as true of the new National Government as of its Labour predecessor. One question which remains is whether the rise in export prices will be accompanied by a further increase in imported inflation in the form of rising import prices. If the upturn is a result of a general economic recovery from recession externally, it may be that the gain from improved export prices will be partly offset by another twist of the external inflationary spiral.

The Strategic Problem

In the view of the present writer the fundamental problem of the New Zealand economy is a clear tendency for the growth of import dependent manufacturing to outrun the ability of the primary sector to finance this growth. Currently manufacturing earnings provide about 20 percent of total export earnings. On the other hand as has been shown elsewhere,[5] primary commodity production has tended to be a sharply declining contributor to GNP in New Zealand. In 1949-50 the ratio of Gross Farm Income (i.e. gross sales of farm products) to GNP was 33.4 percent. At the trough year of 1974-5 it was an estimated mere 13.2 percent. Even the boom year 1972-3 it was only 21 percent. These figures have to be interpreted with some caution but the general implication seems clear. As the economy has grown there has been a tendency for manufacturing growth to outstrip that sector's ability to generate export surpluses. The decline of farming (proportionately) to GNP is a sign of this manufacturing growth and also an indication of the slender export base on which the New Zealand balance of payments rests. It is difficult from the published figures to assign shares of imports to manufacturing and farming separately. Nonetheless there seems little doubt that whilst farming still finances its import bill it also has to provide the wherewithal for the provision of imports to manufacturing. In general the growth of manufacturing in New Zealand has been accompanied by a very large increase in the proportion of the population so employed. Unfortunately much of this growth has been import replacing rather than export promoting.

In summary the situation reached by the New Zealand economy at the time of writing is one of peculiar imbalance. An economy with a significant manufacturing sector still largely dependent on a range of vulnerable primary exports to finance the import bill and so maintain employment. Considered from the standpoint of growth the rise of manufacturing has been accompanied by periodic bursts of growth in the imports of both materials and people, notably skilled workers. The position of the labour force in New Zealand is of considerable importance to this discussion. This is particularly so if we remember that normally a growing population has been associated in New Zealand thinking with growth and development. This outlook might be accepted as typical of a thinly populated country (by world standards) with a culture derived largely from Europe. In this context the New Zealand Monetary and Economic Council commented : "Population growth is probably the major source of economic growth in New Zealand. Increases in population cause the labour force to grow and this will increase output. Part of that increase is likely to be used for additions to the stock of capital, resulting in a further increase in production. On the other hand, increases in population mean that economic growth must continue if current living standards are to be increased or maintained."[6] In fact it is possible to think of economic growth in New Zealand in the period 1946-66 as a case of Harrod's 'natural' growth rate, where labour force and capital stock are fully employed and growth is determined by growth of labour force and technology.[7] It does not do to push the analogy too far but a situation where Governments have deliberately sought to create high levels of internal demand to achieve full employment of resources, and sought economic growth largely by importing new technology and skilled labour clearly has strong affinities with the Harrod case. The problem is, of course, that the Harrod exposition abstracts from causes of instability other than those contained in his basic ratios relating to capital, output, labour and technology. In a real case of a trade-dependent economy other sources of instability arise, notably those concerned with shifts in the terms of trade. In the quotation cited above the point is made that population growth has been a major determinant of growth in New Zealand but that a growing population has to be maintained by continuing growth. The strong cyclical pattern of growth that seems to have emerged in New Zealand in the past decade indicates a qualitative change in economic behaviour. In the 1946-66 period, even in years where the terms of trade were unfavourable, it was possible to keep the economy at the ceiling level of employment of capital and labour by a combination of demand manipulation and import control.

By a curious kind of dialectic the success of this process in creating manufacturing jobs has created the very conditions where the vastly expanded manufacturing labour force can no longer rely on the earnings of the primary sector to finance their employment, This does not mean that economic growth has come to an end in New Zealand. It does probably mean, however, that for the forseeable future the growth path will be similar to that of countries like the UK where growth when it occurs does so in spurts, and it is possible to trace the growth of output in the fluctuations of employment. Beyond the immediate future the need for a wider export base in apparent. Until a restructuring of New Zealand manufacturing towards exports becomes effective, the structural problem will persist.

Notes and References

(1) Economic Affairs Vol. XIV, No. 10, October 1969, page 477.

(Continued on page 115)

Debt Position of Punjab Cultivators after Green Revolution

Rajinder Singh*

Indebtedness has always been the bane of Indian farming. The Indian agriculture could not make the desired progress due to indebtedness of the cultivators. The mounting burden of farm debts resulted primarily from low productivity of the agricultural sector and unfavourable product policy. The farmers were caught in the vicious circles of mounting debts, low investment and low productivity.

The green-revolution in the state in the late sixties has led to significant changes in input use, output and farm earnings. With the higher incomes, farmers have made substantial improvements in creating farm assets of durable nature such as pumping sets, tubewells. tractors and allied machinery, etc. Not only the capital formation has occurred on the farms, but farmers are spending more on socio-religious ceremonies, education of their children and construction of better houses, etc.

How this change has influenced the overall financial position of the farmers, is an important question which is ofter raised. For this, it is important to know the debt position of the cultivators. Little work has been done on this topic after the green revolution. This paper reports the results of a study which was taken up to examine (a) the extent of indebtedness of different categories of cultivators, (b) the composition of indebtedness of different categories of cultivators according to credit agencies, (c) to classify the indebtedness according to the purposes of loans.

Methodology

The study was conducted in general crop farming areas of Sangrur District of the Punjab State in 1972-73. From the District. two development blocks viz. Malerkotla and Ahmedgarh were selected for the study, where the impact of green revolution was more noticeable compared with other parts of the district due to better irrigational facilities. Three villages were selected at random from each of the block. The operational holdings of these villages were classified into three groups viz. small, medium and large and twenty percent from each size category, with a minimun of two cultivators from each village, were studied. The total sample comprised of 109 farmers, of which 35 were small (up to 8 acres), 49 medium (8-17 acres) and 24 large (17 acres and above) farmers.

---

* Statistical Assistant in the Agro-Economic Research Centre, Himachal Pradesh University, Simla-5

The debt in this study is synonymous with the overdues. The amount of loan, which the cultivators could not return by the due date was considered as debt.

Extent of Indebtedness

The proportion and magnitude of indebtedness for different categories of cultivators are shown in Table 1. It will be seen that on an average 86.23 percent of the cultivators were under debt.

Table 1

Distribution of indebtedness according to farm size

Category	Number of cultivators		Percent cultivator indebted	Average amount of indebtedness (Rs)		
	in the sample	Under debt		Per cultivator	Per indebted cultivator	Per acre
Small	35	31	86.11	1560.83	1812.58	289.23
Medium	49	43	87.75	2141.63	3352.02	235.25
Large	24	20	83.33	4022.25	4826.70	167.42
All cultivator	109	94	86.23	2723.52	3158.13	214.64

There was not much difference in the proportion of different categories of farmers under debt. The percentage of indebtedness for small, medium and large cultivators were 86.11, 87.75 and 83.33 respectively.

It will be noted that there was a positive correlation between farm size and indebtedness. The average amount of debt per cultivator for small, medium and large farm was Rs. 1560.83, Rs. 2141.13 and Rs. 4022.25 respectively. However, the incidence of debt was different, when examined on per unit area basis. The debt burden per acre declined with the increase in farm size. The average amount of debt per acre was Rs. 167.42, Rs. 235.25 and Rs. 289.93 on large, medium and small farmers respectively.

Composition of indebtedness according to the source of credit

The indebtedness of different categories of cultivators with respect to the lending agencies is examined in Table 2. It was found that the cultivators were indebted the most to the village co-peratives. The next important agency was the miscellaneous category comprising of relatives, shop-keepers and friends. The other agencies in order of importance were the money lenders, land mortgage banks, commission agents and the government.

There was not much difference in respect of debt position of different size categories of farmers vis-a-vis different agencies. The percentage amounts of debt owed to the village co-operatives and land mortgage banks worked out at 52.69, 43.08 and 47.90 for small, medium and large farmers respectively. This means that small cultivators were relatively more indebted to the co-operative sector compared to medium and large farmers. This could be due to the fact that medium and large farmers were indebted to the government also. The overdues of different categories of farmers payable to money lenders and commission agents did not differ much. The large farmers were indebted the least to the miscellaneous category comprising of relatives, friends and shop-keepers, etc. Among the medium and large farmers, the medium farmers were indebted more to the miscellaneous category and relatively less to the co-operative sector.

The rate of interest charged by various agencies was also studied and it was found that non-institutional agencies (commission agents, money lenders, shopkeepers, friends and relatives) were charging the highest rate of interest of about 24 percent. However, the rate of interest charged by the institutional agencies (village cooperatives, land mortgage banks, commercial banks, government) was much lower. It varied from 9-11 percent.

Indebtedness According to the Purpose of Loans

A. Debt incurred for productive purposes

The purpose for which a loanee raises a loan is an important indicator of his potential of growth. The analysis of indebtedness of different categories of cultivators with respect to various productive and non-productive investments revealed that farmers were indebted more on account of productive investments, the percentage indebtedness varying from 68.60 to 74.41 percent. The data show that large farmers incurred about 18.13 percent of the total debt for the purchase of tractor and tractor implements followed by medium farmers where this figure was 7.63 percent. The small farmers were not indebted on this account. In respect of debt for the installation structures, the small farmers were indebted the most with 23.07 percent of the total debt. In case of medium and large farmers, debt on account of this item was only 4 to 5 percent. In the matter of farm inputs and repairs, the medium and large farmers were indebted more, with debt ranging from 40.12 to 44.12 percent compared to 33.46 percent for small farmers. These figures were higher for large and medium farmers because of larger investments on farm machinery.

Table 3

Indebtedness of cultivators according to the credit agencies

Agencies	Categories of cultivators Small (Rs)	Medium (Rs)	Large (Rs)	All Cultivators (Rs)
1. Village Co-operatives	17410 (30.28)	36316 (25.19)	35734 (37.02)	89460 (30.13)
2. Land Mortgage Banks	12200 (21.71)	25786 (17.89)	10500 (10.88)	48496 (16.35)
3. Commercial Banks	—	—	—	—
4. Government	—	6000 (4.16)	4000 (4.14)	10000 (3.37)
5. Money-lenders	9150 (16.28)	24300 (16.86)	16800 (17.40)	50250 (16 92)
6. Commission agents	6150 (10.96)	16350 (11.35)	11050 (11.45)	33550 (11.30)
7. Others : Shop-keepers, friends and relatives	11280 (20.07)	35388 (24.55)	18450 (19.11)	65118 (21.93)
Total	56190 (100.00)	144140 (100.00)	96534 (100.00)	296864 (100.00)

Note : 1. Figures in parenthese indicate percentage to the total amount indebted in each category.

2. Due to difficulty in getting information on overdues in case of non-institutional agencies (Money lenders, Commission Agents and others) the borrowings of cultivators from these sources were taken to denote the overdues.

Table 3

Indebtedness of the cultivators according to purpose of loans

Purpose of loans	Categories of cultivators			All Cultivators
	Small (Rs)	Medium (Rs)	Large (Rs)	(Rs)
Productive purposes				
1. Tractor or tractor	—	11000	17500	28500
implements		(7.63)	(18.13)	(9.60)
2. Other implements	3200	8250	4900	16350
and machinery	(5.69)	(5.72)	(5.07)	(5.51)
3. Irrigation	12964	5838	5100	23902
structure	(23.07)	(4.06)	(5.28)	(8.05)
4. Inputs and	18800	34027	38734	121561
repairs	(33.48)	(44.42)	(40.12)	(40.95)
5. Livestock	6350	13650	—	20500
	(12.19)	(9.47)		(6.91)
Non-Productive Purposes				
6. Buildings	—	14515	20309	34815
		(10.07)	(21.03)	(11.75)
7. Marriage and other socio-religious	10351	20800	5300	33451
ceremonies	(18.42)	(14.43)	(5.49)	(12.28)
8. Family maintenance	4025	8000	4700	14735
expenditure	(7.17)	(4.20)	(4.18)	(4.97)
Total	56190	144140	96534	296864
	(100.0)	(100.0)	(100.0)	(100.0)

Note : Figures in parentheses indicate percentage to the total amount indebted in each category.

For the purphase of livestock, the large farmers incurred no debt. The small and medium farmers were indebted to the extent of 12.99 percent and 9.47 percent respectively. On the whole, the small farmers were indebted the most for the creation of assets which could be considered directly productive for agricultural purpose. Next in order came medium and large farmers. The amount of debt for productive purposes to total debt was 74.41 percent, 71.33 percent and 68.00 percent for the above categories respectively.

Break-up of debt incurred for non-productive purposes

Regarding the expenditure on non-productive assets, the small farmers were indebted the most on account of loans incurred for marriages, socio-religious ceremonies and family maintenance expenditure with debt at 22.59 percent. In case of medium farmers, the debt burden on this account was 18.63 percent followed by large farmers, where the figure was 10.37 percent. On the other hand, there was no debt on small farmers on account of the loans obtained for the construction of buildings. The percentage amount for this item was the highest on large farmers (21.03) followed by medium farmers (10.07). Thus, with respect to debt incurred for non-productive purpose, large farmers were comparatively more indebted on account of the construction of buildings.

Conclusion

The debt burden was found to increase with the increase in farm size. The average amount of debt per cultivator was Rs. 1560.83, Rs. 2141.63, Rs. 4022.25 in case of small, medium, large cultivators respectively. But the incidence of debt was inversely correlated with farm size, when examined on per unit area basis. The agencies to which cultivators were indebted in order of importance, were village co-operatives, miscellaneous group (comprising of shop-keepers, friends and relatives), money lenders, land mortgage banks, commission agents and government. Among the different categories of cultivators, the large farmers followed by medium farmers were indebted more on account of investments made for the purchase of tractors and tractor implements, and construction of buildings compared to small farmers. On the other hand, the small farmers incurred relatively more debt due to installation of irrigational structure, purchase of livestock, celebrations on marriage and other socio-religious ceremonies.

(Continued from page 109)

(2) Since primary commodity prices have tended to fluctuate more (historically) than the prices of manufactures, in a downswing the value share of primary exports will shrink. A fortiori, in the present situation manufactures prices rose whilst primary prices fell absolutely.

(3) See 'Pacific Basin Economic Indicators', Vol. 1 no. 2 June 1976. F.R.B. of San Francisco.

(4) See New Zealand Budgetary Statements 1973/6.

(5) See Report of the Farm Incomes Advisory Committee to the Ministry of Agriculture and Fisheries, March 1975 Wellington New Zealand.

(6) New Zealand Monetary and Economic Council Report: 'Growth'. Wellington NZ 1973.

(7) Where $Gn = n + t$, $(Gn = \Delta N/N + \Delta T/T)$
e.g. See Kregel: The Theory of Economic Growth, p. 40, Macmillan Studies in Economics.

The Impact of Tractors on Land Development and· Expansion· of Irrigation

Rachhpal Singh*

In our agriculture, tractors are of recent introduction and their effect on cultivation need to be identified in the initial stage; the farmers may buy a tractor without acquiring the skill and experience of running it efficiently. As time passes, the tractor farmers gain skills in handling this farm power, the full impact of tractors will be observed.

However, one of the major advantages of tractors bagged so far is the development of land through land-levelling, which means setting up a proper gradient that would make effective use of improved farm inputs in addition to land and water. Thus the contribution of tractors in increasing productivity through land development and increased irrigation needs attention.

In this article an attempt is made to quantify the efforts made by the farmers with the help of tractors in transforming the unproductive land to a shape of desirable seed-bed and enhancement of irrigation facility with the use of tractors. The impact of these developments on crop-mix and returns was also brought to light.

Methodology

A sample of 136 tractor holdings (with average farm size of 11.12 hectares) was drawn with probability proportion to tractor population in different crop-zones in Punjab to study the impact of tractors on various aspects of farming. From this main sample fifteen farmers who developed their land with tractors were taken up for the present study.

---

* Research Assistant, Department of Economics & Sociology, Punjab Agricultural University, Ludhiana.

Expansion of Irrigation and Increase in Productivity

Tractors, though costly proposition, for irrigation have been used for irrigating the lands which could not be commanded by the existing irrigation installations. It was done because of irrigation being a very important factor in crop production and with the hope of getting proper stationary power source for irrigating that piece of land in the near future. • Another reason for using tractors for irrigation is the problem of electric power shortage which the tractor farms have tried, to some extent, to overcome through the use of tractors.

The twelve farm holdings which expanded irrigation through the use of tractors, were studied. The acreage under irrigation was expanded on an average by 1.27 hectares per holding thereby showing 12.44 per cent increase in irrigated area. The productivity per hectare (gross returns) before the expansion of irrigation was Rs. 2150.42 and rose to Rs. 2998.17 per hectare as a result of increased irrigation facility, thereby showing 39.42 percent increase in gross returns. It was further observed that the land to which the irrigation facility was extended after the purchase of tractor was either leased out or under extensive cultivation before the purchase of tractor.

Crop-mix and Input Use

There was a progressive shift in cropping-pattern and input use on the tractor developed and irrigation expanded land which gave an impetus to productivity.

In case of farm holdings which developed their land with tractor, it was found that undeveloped land was kept fallow except on three farm situations where wheat was sown in rabi with per hectare input cost of Rs. 228.00. It is clear that the land, after development, was double-cropped with paddy, American-cotton, maize-desi and guara in kharif followed by wheat in rabi season, with yearly input cost of Rs. 603.70, Rs. 607.30, Rs. 481.50 and Rs. 400.50 per hectare respectively.

The cropping pattern followed before the expansion of irrigation (Table-1) was fallow (on two farm holdings), maize-desi, cotton-desi and guara in kharif followed by wheat in rabi season. The input cost per hectare per year was Rs. 310.50, Rs. 423.60, Rs. 512.15 and Rs. 376.65 respectively. After the expansion of irrigation such crops as paddy, maize-hybrid and American-cotton with more returns and higher water requirement got introduced and input cost incurred per hectare rose to Rs. 642.15, Rs. 524.75 and Rs. 638.20 respectively. Thus agriculture on these farms became more capital intensive and accordingly capital/credit requirement increased.

Table 1

Cropping Pattern and Input Use before and after Land Development and Expansion of Irrigation, in Punjab (Overall-results)

Before			After		
Cropping Pattern		*Cost of inputs per hectare per year (Rupees)	Cropping Pattern		Cost of inputs per hectare per year (Rupees)
Kharif	Rabi		Kharif	Rabi	
1. (a) Fallow	Fallow	—	(a) Paddy	Wheat	603.70
(b) Fallow	Wheat	228.00	(b) Am. Cotton	Wheat	607.30
			(c) Maize Desi	Wheat	481.50
			(d) Guara	Wheat	400.50
2. (a) Fallow	Wheat	310.50	(a) Paddy	Wheat	642.15
(b) Maize-Desi	Wheat	423.60	(b) Maize Hybrid	Wheat	524.75
(c) Cotton-Desi	Wheat	512.15	(c) Am. Cotton	Wheat	638.20
(d) Guara	Wheat	376.65			

* Cost of inputs includes cost of seed, fertilizers and plant protection.

1. Results for land development.

2. Results for expansion of irrigation.

It can thus be concluded that tractorization has contributed considerably towards total farm output by bringing more area under cultivation, increasing cropping intensity of land through land development, and increase in irrigation resource through tractor use of other farm inputs especially the fertilizers and high-yielding varieties.

On Current Evaluation of Crash Scheme for Rural Employment in Haryana

A. C. Gangwar* and M. V. George*

The Crash Scheme for Rural Employment was introduced on 1st April, 1971. Its entire cost is borne by the Govt. of India. The scheme has two basic objectives, namely (i) the direct generation of employment in all the district of the State through execution of projects which are essentially labour intensive, and (ii) the production of assets of durable nature in consonance with local development plans so that all-round development of the district is assisted. The scheme intended to generate employment for 1000 persons on an average per year in every district. If a year is taken as consisting of 10 working months and a month as consisting of 25 working days, it was expected that on an average 2.50 lakhs mandays of employment would be generated in every district. The rate of wage to be fixed for any district shall be equal to the off season rate for agricultural labourers in the district and shall not in any case exceed Rs. 100 per month. In employing labourers the basic objective was that as far as possible only those labourers should be employed in the projects who belongs to families where no other adult member was employed. In any circumstances, if it was not possible to adhere to this principle ; a person who could not likely to be find any employment anywhere was given preference over one who was likely to find some employment somewhere. In this article an attempt has been made to evaluate function of crash scheme for rural employment in Haryana State.

In the light of the general guidelines issued by the Government of India regarding the implementation of the scheme about 128 projects with a total expenditure of Rs. 65.715 lakhs were implemented in all the districts of the State. Table I gives the details of the type of projects, exsimated costs, and mandays of employment generated under each project.

---

* Department of Economics Haryana Agricultural University, Hissar.

Table I

Types of projects and estimated costs in Haryana State in 1971-72 (Lakhs)

	No. of projects	Total Cost (Rs.)	Wage Component (Rs.)	Materials and supervision (Rs.)	Mandays
1. Agril. Production					
a) i) Land Reclamation	—	—	—	—	—
ii) Soil Conservation	5	4.280	3.822	0.458	0.558
iii) Afforestation	2	3.470	3.123	0.347	0.781
iv) Minor Irrigation	8	6.870	5.500	1.370	Not reported
v) Flood Protection	—	—	—	—	—
vi) Drainage & anti-water logging	33	5.460	4.770	0.690	1.190 lakh
vii) Community orchards	—	—	—	—	—
viii) Development of Panchayet lands	—	—	—	—	—
ix) Pisciculture tanks	—	—	—	—	—
x) Water conservation and ground water recharging	—	—	—	—	—
xi) Other (specify) schemes for digging of fields water courses	2	3.630	2,900	0.730	0.960
Total (i) to (xi)	50	23.710	20.115	3.596	3.889
1. (b) Communications	78	57.000	45.600	11.400	11.400
(c) Others	—	—	—	—	—
Total (a)+(b)+(c)	128	80.710	65.715	14.995	15.289

It is seen that Rs. 57 lakhs constituting nearly 86% of the total expenditure under the scheme during 1971-72 was for communication facilities ; construction of rural roads being the major item. This is understandable in the light of the ambitious programme undertaken by the State Government of linking of every village by metalled roads by the year 1973-74. This programme has had very beneficial impact on the development of the villages as it would break down the isolation of the villages and open up market for their produces. In the programme of augmenting agricultural production minor irrigation accounted for Rs. 6.87 lakhs, which is perhaps one of the most useful economic assets created for the rural community. This was followed by the expenditure on flood control, drainage and soil conservation.

Total employment created under the CSRE projects in the whole State was about 15.289 lakhs the vast majority of which (74%) was in rural roads construction activities.

Table II gives relevant details of expenditure under different types of projects for Karnal district alone.

Table II

Projects in progress during 1971-72 in Karnal District-CSRE

(Rs. lakhs)

Projects	Allocation (Rs.)	Expenditure	Employment (Mandays)
1 Afforestation/Bhabbar Plantation and cho training	1.20	1.196	0.225
2. Construction of rural roads	10.05	10.072	2.503
3. Link drains/Minor irrigation/ Bunds	1.25	1.413	0.327
4. Digging of irrigation water courses	—	—	—
Total for the district	12.50	12.681	3.135

It was noted that a lion's share of the total expenditure incurred in the crash scheme has been utilized for the construction of rural roads ; it constituted nearly 79 percent of the total expenditure during 1971-72. Link drains and minor irrigation came next with an expenditure of Rs. 141 lakhs, followed by afforestation with 1.19 lakhs. In this district 1801.54 kms. of village roads were constructed during 1971-72 out of the target of 2374 kms. Most of these roads were pucca and it is expected that proper maintenance will be undertaken by the State Government. Similarly proper maintenance of link drains constructed under this scheme will be the responsibility of the State Government to maintain them on permanent basis.

Table III presents a summary picture of the expenditure pattern of C.S.R.E. schemes in Karnal district.

An interesting feature revealed in Table III is that the amount spent on meterials was far below the initial ceiling of 20% of the cost of project works as 99% of the total expenditure was on wage payments. This is obviously due to the fact that initially more labour intensive project works were taken up for implementation in the district. The total employment so far generated was of the order of 3.135 lakhs mandays. Thus the scheme has generated on average 25 mandays of labour for over Rs. 100/- spent on the scheme.

Table III

Expenditure and Employment under CSRE Project in Karnal district—1971-73

(Rs. lakhs)

Items		*Amount*
expenditure (Rs.)		
1. On wages		12.573
2. On material		0.108
	Total	12.681
Employmens (Mandays)		3.135

Although the CSRE project envisages that the labourers employed should be recruited from families which have no adult member employed, it has been found administratively difficult to locate such persons and employ them on this project.

For selection of labourers the field officers has been authorised to recruit anyone from the same village or adjoining villages irrespective of their family status or occupation. However, no outside agency was engaged for the recruitment of labour for this project. In this district the workers have not been able to get regular and continous employment under the CSRE projects, as they preferred to get employed in agriculture whenever it was possible. Because, the latter was more attractive than those provided under the CSRE projects. Most of the labourers were recruited locally within a radius of 2 to 10 kms. from the work-site. The wages under the CSRE projects remained stable throughout the year, although agricultural wages fluctuated depending upon the season.

Labour participation in the CSRE Projects

In order to assess the impact of the CSRE projects on agricultural labourers a sample of 15 labourers who had worked under this programme during the months of February and March, 1972 were contacted and interviewed. These labourers did agricultural work in the months of July, August, November, April and May. In the remaining months they did not have enough work on the farm. On account of heavy construction work which was in progress in the state in 1971-72, most labourers were employed by the state P.W.D. department. Agricultural work was practically nil during the months of February and March. since both these types of workers were casual in nature the labour remained under-employed throughout the year. When CSRE work was in progress the number of mandays not worked declined to 5 in these months, otherwise they were not having work for about 4 mandays to 25 mandays. On an average the workers were unemployed from 5 to 25 days in a month. They remained without work mainly during the months of June, August, September and October.

General Observations

1. The crash scheme visualizes the selection of works relatable to the obvious elements of the area development plans of each district. In the absence of well-conceived district plans the choice of projects for inclusion in the scheme is likely to be determined by extraneous considerations. Steps may, therefore, be taken immediately to prepare district plans which reflect the specific requirements of areas of chronic unemployment and underemployment.

2. The scheme attaches great significance to the consideration that the area selected is one where appropriate development works of a labour intensive nature can be fruitfully undertaken and further to provide employment primarily to those belonging to families where no adult member is employed. It is clear that this laudable objective of the scheme is fully attained only if recruitment of labour is done on the basis of adequate information relating to the occupational pattern of the concerned families. A full-fledged socio-economic enquiry is called for to provide the supporting data in this regard.

3. Road development works account for nearly 80% of the total expenditure incurred so far while the priorities in the scheme envisaged indicate only a third of the total outlay on this account. The bias towards road construction needs to be corrected and the development of resources re-ordered with a view to speeding up of the execution of minor irrigation works.

4. Although the pace of implementation of the scheme was found to be satisfactory with respect to the construction of rural roads other development activities such as digging of irrigation channels, soil conservation, etc. have been given only a low priority. It is learnt that there is no dearth of such schemes. However, the delay in their implementation was mainly due to the non-availability of well-considered and appropriate projects. Hence it is suggested that a shelf of qualifying projects may be got ready and relevant

decisions taken sufficiently early so that steady and smooth operations are ensured.

5. Although administrative delays have been reduced to a considerable extent renewed efforts will still have to be made to make sure that the implementation of the scheme is in strict conformity with objectives. The stoppage of projects under this scheme in the wake of financial crisis in the State should be an eye-opener as to what could happen to a crash programme even it was financed cent percent by the Central Goverment.

6. The scheme envisages the creation of productive assets which can provide the necessary infrastructure for economic development in the region. However, more careful planning is needed in the selection of such projects so that one project may be linked to a chain of other projects so as to generate more employment and income. For instance, the rural road building programme could be dove-tailed to the manufacture of bricks and their supply through labour cooperatives so that the intermediary could be eliminated and the benefits may accrue directly to the labour.

7. It was also felt that the CSRE projects should be such as to meet the local needs of the community. Construction of school buildings in villages and housing for rural landless, etc. could be thought of as worthwhile projects, as the existing facilities are grossly inadequate in the region. The supply of materials for these also could be integrated with the implementation of the scheme.

8. The present scheme does not envisage projects for educated unemployed in the rural areas. Facilities for technical training and financial assistance to establish independent business will go a long way to solve this problem.

The following tables relate to the articles entitled "A Note on Projections of Continental and World Population: An of a Application Modified Logistic Curve by Venkareddy Chennareddy and Sheldon Schaffer appeared in the previous issue.

Table 1

Regression Coefficients, Standard Errors, R^2 and F Values for the Regression for Population Projections for Continents

Continent	A	B	R^2	N	F
East Asia	0.1200	0.78677 (0.08137)	0.9492	7	93.5
Europe	0.0608	0.93544 (0.00555)	0.9998	7	28412.0
U.S.S.R.	0.0865	0.92674 (0.01317)	0.9989	6	4951.7
Middle South Asia	0.0494	0.83431 (0.00992)	0.9992	7	7074.0
South East Asia	0.1242	0.83182 (0.01012)	0.9992	7	6754.6
South West Asia	0.1690	0.88894 (0.01857)	0.9976	7	2089.4
Africa	0.0153	0.85810 (0.01995)	0.9978	6	1849.8
Latin America	0.0776	0.83791 (0.02195)	0.9972	6	1456.7
Oceania	2.6189	0.83815 (0.03572)	0.9909	7	550.05
North America	0.1076	0.91042 (0.01537)	0.9985	7	3510.8

Correction: Previous issue page 83 from bottom line 9 read in place of subsequent year *subsequent five year period.*

Table 2

Actual Population in 1965, Estimated Parameters of the Modified Logistic Equation, Derived Parameters of the Logistic, Upper Limit of the Multiple for the Initial Population, and Upper Limit for the Ultimate Population for each Region of the World

(in billions of persons)

Region	Actual population in 1965 (billions)	Estimated parameters		Derived parameters		Upper limit the multiple	Upper limit for population (billion)
	P_0	A	B	λ	a	λ/a	
East Asia	0.85200	0.12000	0.78699	0.23953	0.11497	2.08343	1.77508
Europe	0.44500	0.06080	0.93544	0.06673	0.02796	2.38616	1.06184
U.S.S.R.	0.23100	0.08650	0.92674	0.07608	0.02075	3.66639	0.84693
Middle Asia	0,66500	0.04940	0.83430	0.18116	0.03591	5.04399	3.35425
South East Asia	0.24900	0.12420	0.83182	0.18413	0.03386	5.43818	6.31410
South West Asia	0.06700	0.16900	0.84894	0.16376	0.01227	13.34100	0.89314
Africa	0.30300	0.01530	0.85810	0.15303	0.00499	30.60897	9.27451
Latin America	0.24600	0.07760	0.83791	0.17684	0.02082	8.49101	2.08879
Oceania	0.01700	2.61890	0.83815	0.17655	0.04856	3.63534	0.06180
North America	0.21400	0.10760	0.91042	0.09384	0.02412	3.89032	0.83252

Table 3

Projected Population and Compound Growth Rates for the Regions of the World and for the Entire World, 1970-2035 (in billions of persons)

	East Asia		Europe		U. S. S. R.		Middle Asia		South East Asia		South West Asia	
Year	Actual	Growth rate	Actual	Growth rate	Actual	Growth rate	Actual	Growth rate	Actual	Growth rate	Actual	Growth rate
1970	0.958	2.37	0.462	0.76	0.243	1.10	0.766	2.99	0.288	2.99	0.077	3.05
1975	1.062	2.08	0.479	0.74	0.257	1.07	0.879	2.77	0.332	2.87	0.090	3.01
1980	1.161	1.80	0.497	0.72	0.271	1.05	1.001	2.64	0.380	2.75	0.104	2.96
1985	1.253	1.54	0.515	0.70	0.285	1.02	1.133	2.50	0.433	2.60	0.120	2.90
1990	1.337	1.29	0.532	0.67	0.300	1.00	1.273	2.35	0.489	2.45	0.138	2.84
1995	1.411	1.08	0.550	0.65	0.314	0.97	1.418	2.19	0.548	2.29	0.159	2.76
2000	1.476	0.89	0.568	0.63	0.330	0.94	1.568	2.02	0.609	2.13	0.181	2.68
2005	1.531	0.73	0.585	0.61	0.345	0.91	1.720	1.86	0.671	1.96	0.206	2.59
2010	1.577	0.59	0.603	0.58	0.361	0.89	1.871	1.69	0.733	1.78	0.233	2.50
2015	1.615	0.48	0.620	0.56	0.377	0.86	2.019	1.53	0.794	1.61	0.262	2.39
2020	1.647	0.38	0.637	0.54	0.393	0.83	2.162	1.37	0.854	1.45	0.294	2.28
2025	1.672	0.31	0.654	0.52	0.409	0.80	2.297	1.22	0.910	1.29	0.327	2.15
2030	1.693	0.24	0.671	0.50	0.425	0.77	2.423	1.07	0.963	1.13	0.362	2.03
2035	1.710	0.19	0.687	0.48	0.441	0.74	2.540	0.94	1.012	0.99	0.397	1.90

Table 3 (Cont'd)

Projected Population and Compound Growth Rates for the Regions of the World and for the Entire World, 1970-2035 (in billions of persons)

	...Africa...		Latin America		...Oceania...		North America		...World...	
Year	Actual	Growth rate	Actual	Growth rate	Actual	Growth rate	Actual	Growth rate	Actual	Growth rate
1970	0.351	2.99	0.287	3.13	0.019	2.52	0.229	1.38	3.684	2.29
1975	0.406	2.97	0.333	3.05	0.021	2.39	0.245	1.35	4.109	2.20
1980	0.470	2.95	0.386	2.97	0.024	2.24	0.261	1.31	4.560	2.10
1985	0.543	2.93	0.445	2.87	0.026	2.09	0.278	1.27	5.036	2.00
1990	0.627	2.90	0.510	2.76	0.029	1.93	0.296	1.23	5.535	1.90
1995	0.723	2.87	0.581	2.64	0.032	1.77	0.314	1.19	6.055	1.81
2000	0.832	2.84	0.658	2.51	0.034	1.62	0.333	1.15	6.593	1.71
2005	0.955	2.80	0.740	2.38	0.037	1.46	0.352	1.11	7.146	1.62
2010	1.095	2.76	0.827	2.23	0.040	1.31	0.371	1.06	7.714	1.53
2015	1.251	2.71	0.916	2.08	0.042	1.17	0.390	1.02	8.292	1.45
2020	1.426	2.65	1.008	1.91	0.044	1.03	0.410	0.97	8.878	1.37
2025	1.621	2.59	1.100	1.76	0.046	0.91	0.429	0.93	9.471	1.29
2030	1.836	2.52	1.192	1.60	0.048	0.79	0.449	0.89	10.066	1.22
2035	2.072	2.44	1.281	1.45	0.050	0.69	0.468	0.84	10.662	1.15

SADHANA Beauty CREAM

herflattering loveliness–

The reward of her day to day beauty care with Sadhana beauty cream.

Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.

—essential in day to day Beauty care

**SADHANA
AUSADHALAYA
DACCA**

CALCUTTA-48.
Branches all over India

SBC. 6/71

Annual
Inland Rs. 30.00 (Net)
Foreign US $10.00
Postage by surface
US $2.00
This Copy Rs. 2.50

REGISTERED NO. WB/NC 80
R. N. No. 5182/57

Published by H. Roy from 10, Galiff Street. Block 5, Suite 64, Calcutta-3
and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh
Lane. Calcutta-6. Editor : Himansu Roy. Phone : 55-0477

ECONOMIC AFFAIRS

- Modus Operandi of Drug Multinationals
- Changes in the Distribution of Land Holdings in West Bengal
- Farm Mechanization in Punjab
- India Rolling Backward or Moving Forward ?

Vol. 22, No. 4
APRIL 1977

Revised Annual Subscription Rates :

India :	**Rs. 30.00**
Foreign :	**US $ 10.00**
Postage :	**$ 2.00 (by surface)**

Single Copy (ordy.) Rs. 2.50

Outstation cheques shall bear Rs. 5.50 extra.
Effective from January 1977.

Sd/ M. Roy
Manager,
Economic Affairs

15 September 1976

To serve you better

SOUTH EASTERN RAILWAY

Runs

CONTAINERISED FREIGHT SERVICE

IN RAIL-CUM-ROAD CO-ORDINATED SERVICE.

from GODOWN *to* GODOWN

▨ **FAST** AND **SAFE**

▨ **YET AT A CHEAPER RATE**

Service Available

FROM CALCUTTA TO BOMBAY, MADRAS, BANGALORE AND SECUNDERABAD, VIJAYAWADA AND FROM TATANAGAR AND KANDRA TO BOMBAY & PUNE

For details contact:
MARKETING & SALES DIVISION
S.E. RAILWAY. PHONES: 23-9944, 23-3403, 23-2192

Always in Service
SOUTH EASTERN RAILWAY

THE MOST QUOTED YUGOSLAV PERIODICAL

REVIEW OF
INTERNATIONAL AFFAIRS

—Revue de politique internationale
—Internationale Politik
—Politica Internacional
—Mezhdunarodnaia politika
—Medjunarodna politika

a reliable and indispensable source of information on Yugoslav views relating to current international developments as well as political, economic and social trends in Yugoslavia today

NOW IN ITS TWENTYSIXTH YEAR OF
CONTINUOUS PUBLICATION

Annual subscription rates (24 issues):	
Surface mail	US $ 6.00
Air mail	
Europe and the Near East	US $ 7.00
the Middle East and Africa	US $ 8.50
North and Central America	US $ 9.00
the Far East and South America	US $ 10.00
Australia and Oceania	US $ 12.00

For further information or for sample copies, write to :

Circulation Department
REVIEW OF INTERNATIONAL AFFAIRS
P.O. Box 413, 11001 Belgrade, Yugoslavia.

SHORTLY AVAILABLE !!

THOROUGHLY REVISED AND UPTODATE
Fourth
EDITION

A TRACT ON MONEY

By
RABINDRANATH MITRA
B.SC. (ECON.), (LOND), BAR-AT-LAW
Formerly, Principal, Ananda Mohan College, Calcutta
And
DR. HIMANSU ROY
M.A., M.COM., Ph.D.
Principal, Ananda Mohan College, Calcutta
Editor, Economic Affairs, Calcutta

This edition includes almost all the current developments in monetary theory and international monetary cooperation, including the collapse of Bretton Woods and re-emergence of International Monetary Fund.

Some Highlights :

Value of Monery : Saving and Investment : Consumption : Multiplier and Acceleration Principles : Growth Theory : Monetary Theory of Interest : Theory of Inflation : Business Cycle : Exchange Rates and Exchange Control : International Monetary Cooperation.

THE WORLD PRESS PRIVATE LTD.
CALCUTTA-12

Contents

Editorial

133 India is Rolling Backward or Moving Forward ?

Articles

A. C. Sharma
135 Farm Mechanisation in Punjab

Som Deo
137 Modus Operandi of Drug Multinationals

Ranen Ghosh
147 Towards an Understanding of a Developing Economy : A Case Study of Ghana—II

S. S. Grewal and J. S. Chamak
154 Economics of Farming on Small Farms with Owned Bullocks vis-a-vis Hiring of Tractor Services

P. K. Chatterjee and Dhruba Ranjan Mukherjee
160 Changes in the Distribution of Land Holdings in West Bengal

ECONOMIC AFFAIRS

Volume 22 April 1977 No. 4

India is Rolling Backward or Moving Forward ?

Amazingly, in keeping with the politics of 'suddeness' Mrs. Indira Gandhi, erstwhile Prime Minister of India, and her son Mr. Sanjoy Gandhi along with the Congress have suddenly slided deep into the political ditch. This rocked the whole nation which has begun self-questioning why this abrupt total change in the political arena that has brought to power a 'no-party' party backed by a defectors-packed ally and supported by a communist party suddenly pulled up from the political debris and further supported by some parochial parties.

On points of this change, opinions broadly differ. Most people seem to have discovered that the Congress debacle is the logical end of the heaps of sins committed by Mrs. Gandhi in collaboration with her son against the nation. The angry people say that the lady in order to perpetuate the 'dynasty rule' let loose the Emergency to throw the revolutionary leaders in prison, sterilize both the intellectual and the biological reproductive capacities of the nation through bureaucratic administration, and amend the Constitution to concentrate power on her own hand to rule the country as a great dictator of any totalitarian country.

Contested, come the replies : Is it not Mrs. Gandhi who had sent the workers and peasants back to factories and fields to work hard for the nation ; disarmed the 'revolutionary' political professionals and restored law and order, alerted the judiciary about the 'social philosophy' ; restrained the unlicensed press and intellect ; sent the economic offenders to jails and inflicted terror on their minds ; down upside the 30% inflationary rate to negativity ; and, last but not least in importance, liberated East Pakistan and raised the status of the nation by making it a member of the International Nuclear Club ?

Asserted : 'Dmocracy was in danger' and the people rose silently to save democracy.

Opposed : What, Democracy ! And in India, where 7 out of 10 are in Census terms illiterate ? And in extreme hunger ?

Modified assertion : Then out of anger they registered their protest.

Still : India is a peculiar land of tolerance. Had they been angry, where had their anger been during Emergency ? Thanks to the teachings of Gandhiji, the social attitude, and the institutions created by constitutional democracy !

How then all the contributions of Mrs. Gandhi were swept away by Janata wave ? Can this phenomenon be explained by the Law of Motion fully ? Perhaps not. For what has come out of the quantitative changes is revivalism. The contradictions clashed in abnormal haste in Mrs. Gandhi's 'thesis' because she was an adventurous path-breaker in Indian politics. The motive-force behind all her activities was personal ambitions, devoid of any positive social ends. So she was crashed and the nation was gloriously profited by her acts of splitting, uniting, and further splitting the Congress. The nation is now free from the Congress-monopoly in politics. Mrs. Gandhi will go down the national history for this very negative act !

There is no room to contest that the nation is now not in the process of revivalism. The old ideas of free economy, western ideas of democracy, Anglo-Amerian aid and grants, flow of its arms and politics (countered by communist world's counter-strategy), soft labour policy, development by inflationary finance and alliance with anti-national forces are all on the horizon. The old tools in old methods will be tried again on old paths by the very same old hands with the added disadvantage that the hands that now rule are divided by opposing ideas about life and matter.

Still let the people hope for the best and the transmitting agents, the press and publicity, which have proved themselves, absolute and the greatest danger to any modern constitutional democracy, feel the warmth of driving the country into negative fanaticism.

Farm Mechanisation in Punjab

A. C. Sharma*

The process of mechanisation of crop farms in the Punjab was accelerated as a consequence of the progressive adoption of seed-irrigation-fertilizer technology and the system of multiple cropping in the green revolution period and afterwards. The increasing emphasis on production per unit of area and time has necessitated greater power input on individual farms for completing all agricultural operations with thoroughness and in time. The growth and improvement in farm technology would likely increase still further the demand on power for more intensive practices for meeting the over-increasing need for the rapid completion of farm operations.

The concept of stationary power use is a unique feature of mechanisation of individual farms. Such stationary farm operations as irrigation, crushing, shelling, threshing and chaffing, are mechanised using such motive power as tractors, diesel engines, electric motors and their associated equipment for (i) releasing a part of human and bullock labour load periods; (ii) making timely operations possible; and (iii) improving the efficiency of labour and other complementary factor inputs. Some of the substantial farmers have mechanised their field operations as well. These operations include tillage, sowing, hoeing, timely harvesting, and transportation of farm produce to the market. Some of these farmers utilize the surplus capacities of their power-machine combinations by extending their use to neighbouring farmers through custom-hire. Again the Agro-Industries Corporation and the Agro-Service Centres recently established in various parts of the State also perform selected farm operations on cultivators' fields against payment. The pattern of mechanisation that has finally emerged is consistent with the peculiar characteristics of crop farms in this State, viz., capital shortage and the availability of abundant and cheap labour force during most parts of the year; the scarcity of labour being limited to the peak periods when the harvesting and post-harvesting operations of one set of crops overlaps with the preparatory tillage and showing operations of another set of crops. This paper is an attempt at investigating the present and projected pattern of mechanisation and examining its economic implications in the Punjab State.

---

* Farm Economist, Department of Economics & Sociology, Punjab Agricultural University, Ludhiana.

Pattern of Mechanisation

The use of stationary power source as diesel engines and electric motors for energising such operations as lifting irrigation water, threshing of wheat, and shelling of maize, has been wide-spread. The former are more extensively used as compared with the latter due perhaps to the uncertainty of electric supply. The tractor power source is possessed by relatively small number of farmers, the reason being high initial cost and the small volume of work on individual holdings. Large tractors of 25-35 h.p. are comparatively more popular than the small ones in the category of 15-25 h.p. The tractors are generally used to provide power for the use of such equipment as harrows, cultivators, levellers, seed-cum-fertilizer drills and trolleys. Sometimes tractors are also used to mechanise stationary jobs including lifting water for irrigation, threshing of wheat and shelling of maize. The trends indicate that the use of the entire complement of power machine combinations would increase over time. It is, however, cautioned that the economic management of farm power and machinery is one of the most significant factors affecting farm income. For example, if it needs only 5.0 h.p. to pump water for irrigation from 15-20 feet below ground level, it will certainly be a waste of energy if a 25.0 h.p. tractor is used as a stationary engine for this purpose. Again, some farmers continue to use high horse power tractors for operating small threshing machines. This also is an uneconomic use of available power. For economy a machine should use no more power than necessary because power is another cost of machine performance. The individual operations in a machine system must be adjusted and combined in such a manner that their overall performance is determined at a minimum cost to ensure maximum profits to the firm business. Farm machinery systems analysis has indicated that small power units (5.0 h. p. diesel engine/electric motor) and their ancillary equipment for the mechanisation of stationary operations, and a 14.0 h.p. tractor alone or in combination with the diesel engine or electric motor for energising both stationary and field operations are surplus to the requirements of large (10.12 hectare) farms even after incorpo-

(Continued on page 166)

Modus Operandi of Drug Multinationals

Som Deo*

This paper is written as a piece of a modest attempt of looking towards the profiles of drug multinationals and their discriminating modus operandi in developed market and developing countries' markets. The paper in divided into four parts. Part I analyses the factors underlying their strength. Part II deals with the modus operandi and different types of discriminatory devices used by them, e.g. price discrimination, product differentiation, tax evasion through transfer pricing and showing low profitability, etc. and their impact on developing countries. Part III highlights the Indian experience of drug multinationals, and part IV is given for summing up and concluding observations.

I

The MNCs can be taken as the most powerful organisations in the world. MNCs are not only powerful economically, even non-economically they are equally powerful. Regarding their strength Deighton F. Griffith of Harbados says, "MNCs were regarded as an asset in the Carribean region because thousands of people depended on them for their subsistence. Those corporations did not regard themselves obligated to the interest of the region they were located in." Naturally, they (drug multinationals) take the advantage of pauper labour, raw materials availability and lenient labour laws prevailing in most of the LDCs. There are mainly four factors giving unique power to any such firm, these are :—

(a) Economies of scale ;
(b) Technological leadership ;
(c) Market strategy ; and
(d) Privileged access to raw materials.

In case of Drug and Pharmaceutical Multinationals two factors namely, technological leadership and strategy of capturing

---

* University Studies in Commerce, University of Rajasthan, Jaipur.

the market and crushing down the competitors thereby are the factors making them powerful. Their dominance is derived from producing new drugs and marketing them effectively. Technological leadership is based on some necessary conditions. The most essential part of it is that they allocate huge sums of funds to R & D Programmes. Moreover, the state support is lent to these multinationals in their home countries. It is recorded 300% and 200% in UK and USA respectively.

Admittedly the research process of drugs is very complex and time consuming. Time between a new compound's discovery and marketing varies from 4 to 7 years. Cost of a new major medicine comes to some £3 million in UK while in France from the stage of synthesising to market stage it costs 10 to 20 million franc. How long and complex is the process can be noted from the fact that "for every single compound accepted as having therapeutic value, on an average, 5000 compounds have to be investigated. Of which 3500 are eliminated after the first pharmacological, chemical and toxicity tests and further 1470 compounds are eliminated after intensive experimental tests."[2] In developing countries such large funds for R & D and very long period cannot be afforded. In drug industry the formula applies that "lesser innovative firms reap lower rate of return." After showing the lure of so-called latest technology drug multinationals dominate the developing countries' ~~markets~~ like anything.

Market capturing strategy is one of the most "tactic technology" innovated by these so-called supra-national corporations. They command world-wide network of efficient sale agencies, which have very good salesmen. Drug multinationals incur huge costs on promotion. The ratio of promotion cost to that of sales is very high. For example, in 1967 promotion cost on an average was 16% of sales in UK, 20% in Switzerland, 22% in France, the Netherlands, and FRG and 26% in Argentina. This promotion costs not only include advertisements but some other tactics also such as samples, gifts, and other rewards like dinners, abroad trip, etc. It was calculated that worth of 1 to 2 billion US dollars samples is distributed yearly. And what is fantastic to note is that the dealers sale them off removing the sample labels. In developing countries most of the physicians are so impressed by drug multinationals' salesmanship that they (physicians) cannot able to remember the names of other medicines having good substitutes at low prices. Some US doctors remark that "very few doctors know about what they prescribe.'

The so-called researches and studies by the hired men also create an atmosphere of favouritism and strengthen the market power thereby. Some of the authors have sold off themselves in consideration of some reward. These rewards are in the form of getting their series of papers published in journals, piece of equipment, trip abroad or simply making of money. Most of the developing nations today are looking towards the foreign. They are very susceptible. "Not only are doctors trained along the lines of the developed countries thereby becoming familiar with international brand names; they (and their patients) also have a strong prejudice in favour of foreign as compared to domestic producers."[3]

II

The multinational corporations have acquired a great notoriety for their modus operandi and so also the drug multinationals. Because of their activities they have created a great chaos and hit the front page criticism not only by individuals but also by different national and international forums. Now-a-days there is an increasing demand for making a code of conduct for the international companies, be of drug and pharmaceutical or any. But the question is why this situation is so. Simply because of their operations. Every issue of multinationals involves petitio principii. Recent coup d'etat (like Chile) has caused a great stir. Drug multinationals are also not lagging behind of these operations.

Drug multinationals have invented different practices which are directly or indirectly detrimental to the developing countries. Power of developing nations to compete with them is growing weaker in some cases. There are three types of discrimination being adopted by drug multinationals in less developed countries. These are :—

(a) Price discrimination (charging different prices, over-pricing etc.);
(b) Showing technological lure to the less developed nations and exploitation thereby; and
(c) Product differentiation.

All these points would serve no purpose unless they are properly supported by facts and figures. Although it has been said at the outset that arguments may be both for and against. But in the author's opinion the favouritism today holds little water. Any way, we should first examine the facts and opinion is to be formed thereafter.

Price discrimination may be done in so many ways. But what usually the drug multinationals adopt are :—

(i) Different prices charged at different parts of the same country

Sometimes the prices charged from the buyers of the same region have fantastic variations. For instance, Roche sold its librium at 45 dollars (500 capsules of 25 mg. each) in Des Moines, at 18.5 dollars in Philadelphia and 21.75 dollars to the Vetaran's Administration, the difference between highest and lowest city prices being 243%[4] Despite the price regulations Roche trapped the market and maintained the prices. Here it would be worthwhile to quote Monopolies Commission —"First, a potential competitor would be discouraged since he would normally attempt to establish his initial sales in the hospital market, secondly, hospital doctors would prescribe Roche products—branded reference drugs and this precedent would tend to be followed by the patients' general practitioner when patient returned to his care ; and thirdly, hospital staff would tend to regard the company's products as causing the smallest increase in the hospital's drug bill and would not be so readily aware of the cost of treatment for patients returned to the general practitioners' care."[5]

(ii) Different prices in different countries

The main philosophy of drug multinationals regarding price discrimination is "the price what market can bear". Then price variations from country to country are evidenced. The variations ranges from 800% to 1000%. Again we can take the example of Roche. How the same firm charged different prices is shown in Table I.

Relative Wholesale Prices of Librium and Valium in Four Countries on March, 1, 1975 (in Dollars).

Country	L (per 100 mg. capsules)	V (per 100 mg. tablets)	L Prices as % of UK Price	V Prices as % of U.K. price
U.K.	0·83	0.63	—	—
West Germany	4.38	5.35	527.7	849.2
Switzerland	4.75	5.44	572.3	908.4
US	5.80	6.89	698.8	1093.7

Source : Business Week, June 16, 1975, P. 53 and letter by A. Hartman in Business Week, June 30, 1975.

Note : L=Librium V=Valium

Overpricing—a Meanace

Prices charged in developing markets more than originally charged in developed countries has been the major cause of becoming an onus on the poor economies. Agreed, if the over-pricing practices are within the tolerable limits but it is not so. This matter deserves serious concern. For example, according to C. V. Vaitsos's study chlordiazepoxide and Diazepam were overpriced by 5000% to 6000% by Roche. "An examination of 72 cases in Iran for the late 1960s shows, for instance, that 38% of the cases had overpricing of intermediate drug chemicals of upto 199%, another 50% of the cases 200% to 999% and 6% of even higher magnitude. In one case the imported chemicals (Doxycycline) was overpriced by more than 10,000%."[6] "In Egypt an instance of overpricing of 159% is reported for 1965".[7] Several instances of such overcharging have been documented in Columbia, where subsidiaries in the pharmaceutical industry paid 155% more than the c.i.f. price for intermediate drugs imported from parent firms.[8] Many intances of overpricing have been found in Pakistan, India, Brazil and Turkey.

Technological Lure to Less Developed Nations

As the drug multinationals are powerful technocrats naturally they are in a position to attract developing nations. But what really happens is entirely different from the picture. They transfer the technology to host developing country when they are out-dated or not getting place in the developed economy. If some indigenous technology is developed the drug multinational picks it up on royalty basis which is many times profitable to them, In such a way the developing countries are being duped by these giants. If is also true that developing countries have no proper set-up of R & D and, moreover, no relationship between commercial branch of pharmaceutical and research institutions. Concept of transfer of technology requires a separate paper for discussion.

Product differentiation :

Product differentiation is also one of the weapons in the armoury at the disposal of drug multinationals. They produce medicines in several names with the same generic brand. Sometimes a good amount of variation is found in prices of same type of medicine sold in different names though having same therapeutic potential. For example, a small *British* firm supplies librium equivalent to

Roche's under a compulsory licence, at prices 25% lower but had not been able to capture even 3% of the market. While in Italy seven firms were selling at prices 30% lower than Roche without being able to compete 80% market power captured by latter. "In India librium was sold in 1972 at Rs. 16.00 (per 100 tablets of 10 mg each) when generic name equivalent, were available from small producers for prices as low as Rs. 1.05."[9] This product differentiation is up to the extent that in US 700 basic drugs sold in 14,000-35,000 forms, in FRG there are 24,000, in Italy 21,000, in France 8,500 and in UK 9,500.[10] In less developed countries the differentiation is extensively practised as in developed market economies. For example, Spain up to 25000 medicines, Portugal 11,000, Greece 9000, Iran 4200, Turkey 3400, Brazil 14000, and India 15000."[11]

Indirect and Social Cost

Hitherto mentioned facts prove only economic consequence or the cost borne by developing nations in direct manner but some indirect cost in terms of social or human values are also being paid by the host countries. One thing is that the giant drug multinationals have crushed the small indigenous enterprises which is a great loss to the host country. They have entirely suppressed the new entrepreneurs. Some examples have been noted about the supply of 'ineffective medicines' for which the society pays irrecoverable cost. What is more serious is the drugs produced and sold by drug multinationals meet the requirement of only urban elites and rural masses are still far from the approach. It is because of two reasons. One is lack of information and another is the high prices which they cannot afford.

There is no such body which can testify the effectiveness of the medicines and ban the inefectives. Mcgragor Committee was there in UK but disbanded in 1970 allegedly under the pressure of drug industry.[12] "It is well known that billions of wasted dollars, hundreds of thousands of unnecessary hospitalisations for adverse drug reactions and thousands of lives needlessly lost are price society pays for the promotional excess of the drug industry.[13] Drug multinationals have been the major cause of impairing the local R & D programmes.

III

India has also been a region of drug multinationals' penetration like other developing nations. But presentday's situation is very different from that of earlier time. In India 51 units of foreign drugs companies are working which control as much as 56% of the production in terms of value and 53% of the formulations. While the indigenous sector consisting of large scale sector and small scale sector accounts for only 17% and 20% of the production of bulk drugs and formulation respectively. "What is more the two public sector units, namely the IDPL, and HAL which have been assigned a commanding position to reach and control over a third of the total investment (of Rs. 225 crores) in the industry and now have a production value of only 27% in basic drugs and as little as 7% of that of formulation."[14] It clearly shows the dominance of foreign drug companies over the production as well as markets. Only ¼th of the bulk drugs required for the formulation is being produced in the country while a large part (¾th) is being imported at high cost. The profitability in producing bulk drugs and formulation has a wide gap, with an average profit of 10-15% in producing bulk drugs ; in case of formulation it ranges from 80-150% on capital employed.

The great trouble in India is under-utilisaton of capacity. The IDPL in 1973-74 accounted for 44.5% licenced capacity for penicilin, 34.4. for streptomycin and 80.8% for tetracycline. But production of these three bulk drugs were only 19.8%, 12.8% and 27.1% respectively of total. And the capacity utilisation came down to 46%, 24% and 64% respectively. Moreover, in spite of formulations being a profitable proposition the undertaking did not make any attempt to increase the capacity for formulatious. Some of drugs and tonics are very costly in India. For example, chloramphenical is Rs. 524.69 per kg. in India as against Rs. 200 in Europe, tetracycline Rs. 650 and Rs. 200 ; oxyphenyl butazone Rs. 1002 and Rs. 400 ; Vitamin C Rs. 113.51 and Rs. 50 respectively.

According to the latest study conducted by RBI in 1974 of foreign companies revealed that profitability of drug and pharmaceutical industry is very much higher than that of other industry. It is partly due to the diversification like pesticides, dyes, chemicals, etc. In last two years the prices of drugs recorded an increase of 26 per cent.

Hathi Committee strongly recommended the nationalisation of drug industries so as to regulate them not in the interest of urban elites but in the interest of rural masses also. Because there are so many life-saving medicines (which are 117 as identified by the Committee) not available to the corner-placed people in India. As the Committee rightly observed "the multinational units of drugs and pharmaceutical industry have dominated in this country in the field of synthetic drugs and by far the largest component of their formulation activity lies in this area. Most of these multinational units, both in small and large sectors, have concentrated their activities on the products marketed by their overseas parent organisations and have almost completely concerned the Indian market for their respective products. They have also built up enormous markets on the sale of a large variety of other formulations, for example, tonics, combination of vitamins, etc. Even where purely Indian units in the medium and small scale sector produces equivalent formulations they face the greatest difficulty in obtaining the relevant bulk drugs from the multinationals, but more particularly in facing high pressure and costly sales practices of the latter. In the last few years there has been a further tendency in multinational units of introducing newer products of similar activities with marginal difference. Since such products are patented they are usually priced high and allowed to be formulated for a period of two years by importing the basic drugs from their principal at high price. From the early days of our independence, the Government of India has been endeavouring to persuade the multinational units to produce bulk synthetic drugs in this country and share these with other formulations. The response of multinationals during the early years was relatively poor. However, in recent years, some of the multinational units did enter the field of bulk drug production obviously because of the emergence of the public sector. Even so, they were usually highly selective and chose low tonnage, high money-value bulk items and started to manufacture these, frequently from penultimate or near penultimate intermediaries, imported usually from their corresponding principals, at high cost. This position is only slightly better today."[15]

Most essential is that no betterment could be achieved unless the domestic production is increased tremendously with vigour. In India more dependence on imported drugs is caused by constant losses incurred by public sector enterprises. For example, there has been a cumulative loss of Rs. 42 crores as in March 1974 in public sector. In last five years India has imported the drugs worth of Rs. 70 crores. Actually in India a paradoxcial situation is witnessed as the study of the Economic Times reveals : "The recent paradoxical situation of scarcity of popular brands of medicines on the one hand and the mounting inventories with the STC and IDPL on the other is mainly due to imbalances in indigenous production." So, there is no short-cut to success except increasing the production. If price control had not been in India the prices would have been mounting.

It is being realised constantly that the different types of malpractises practised by MNCs must be unfolded and approprate measures should be taken. A new wave of nationalisation in all the developing countries has strengthened the proposition. If we go into the deep we will find that these MNCs have been the root cause of forming colonies in different parts of the world. Regarding some countries of Caribbean, Latin American, African this fact is as true today as it was. They are grown up for themselves at the cost cf trammelling the growth of host countries.

Now the dissents have come up in the from of regulations, nationalisation of foreign firms, price controls, etc. But cases are reported that MNCs are unworried of these laws of regulations. For example, the profitability shown by these foreign firms is far from the realism and tax dodging thereby. Because it is very difficult to fathom the depth of the mind of MNCs. Although many suggestions and observations have been given and many may be given what is more important is the effective implementation of any suggestion in the form of law with confidence and allegiance. So many cases have been found that in the lack of confidence and allegiance the limits fixed by law or authority have been eroded by the international giants. What is needed is to apply the things within certain conditions and prevaling situations. Because the applicability may be different from one country to another or from one set of circumstances to another set of circumstances.

First of all, the indigenous production is to be stepped up by placing the drugs and pharmaceuticals on the list of priority. Secondly, the distribution system of medicines must be structured in such a manner that they are easily accessible to all in the regions under study. It has been the tendency that the distribution agencies like to go in the urban areas, but the rural masses are equally important. There are thousands and millions of deaths caused by lack of medicines. This distribution system should have proper linkage with the health facilities provided. For there is the problem of 'disguised ails' in remote areas of the countries, which suffer from the lack of identification of diseases. Thirdly, large sums should be provided for R&D programs and the foreign collaboration could be received in such fields. A wide network of R&D facilities has its prime importance in drugs production, and the R&D instiutions should be related to commercial branches of production that direct benefit may be derived. Fourthly, a sadist quality control is needed and there should be a national body to examine the 'effectiveness' of drugs before they were put to the market to be used by customers. Fifthly, new capacities should be created and existing capacities be fully utilised. Sixthly, the financial operations of foreign companies should be controlled according to the country's own prevailing situations. The remittances of profits and transfer of funds should also be strictly controlled and surveillance to be maintaind.

Thus, the drug and pharmaceutical multinationals should be made to operate in the interest of the host nations rather than in the interest of themselves. And the companies themselves have to change their philosophy also. Now gone are the days when international companies made the developing countries dance on their rhythm.

Food Notes

1. Mr. Orvilla L. Freeman's inaugural address to Indo-US Joint Business Council, New Delhi-Feb 2, 1975.
2. Documentation et Analyses Financiers SA (DAFSA) pp.21
3. Noted in India by Hathi Committee pp. 86-87 and for Egypt by Handoussa.
4. H. Steel "Patent Restriction and Price Competition in Ethical Drug Industry" hearing before the sub-committee on Monopoly, Washington, DC pp. 1973-97 published in Journal of Industrial Economics July, 1967.
5. Monopolies Commission Chlordiazepoxide and Diazepam (London HMSU 1973)
6. G. Salekhon, "Commercialisation of Technology in Developing Countries : Transfer of Pharmaceutical Technology to Iran". New School for Social Research, New York 1974 pp. 152 and Appendix III table A,
7. H.A. Handoussa "The Pharmaceutical Industry in Egypt", 1974 pp. 116.
8. Dale R. Weigel, Finance & Develoment, Sept. 1974 Vol II No. 3 pp. 29.
9. P. S. Agarwal, "Anomalies in Drug Prices and Quality Control", Economic and Political Weekely, Nov. 18, 1972,
10. Documentation et Analyses Financiers SA (DAFSA), "The Pharmaceutical Industry in Europe", pp. 40-41.
11. Ibid.
12. Guardian, May 14, 1974.
13. Testimony of Dr, S.M. Wolfe, Director, Health Research Group, Washington D.C. in the U.S. Senate pp. 646.
14. The Economic Times, May 10, 1976.
15. Hathi Committee pp. 60 paras 58-60.

Towards an Understanding of a Developing Economy : A Case Study of Ghana—II

Ranen Ghosh*

Equation (3) may be called price equation. It shows that price-level depends on real income. The nature of this equation needs elaboration. There is an unsettled controversy between the monetary theorists and structuralists. A hypothesis may be set as follows : H_0 : there is no relationship between inflation and economic growth ; this is null hypothesis. The alternative hypothesis is H_1 : there is relationship between inflation and economic growth. To test this null hypothesis, two issues are to be settled. One, how are the variables to be quantified ? Inflation may be represented by the growth-rate of price-level, say g_p. Economic growth may be represented by the growth-rate of gross domestic product at constant prices, say, g_y. Second, data to be used for an underdeveloped country on these variables are subject to measurement errors, and hence ranking of these variables (2) are to be used. The testing of this hypothesis has been discussed elsewhere in detail.(3) Now, a hypothesis that there is a relationship between g_p and g_y may be taken a step further than what is discussed in my paper (Ghosh, 3), where a rank corroelation is considered. Correlation merely indicates association and does not imply any causal relation. A step further than this leads to a regression analysis—g_p and g_y are likely to be mutually dependent. One of thess two possibilities in the context of simple equation, is that g_p is function of g_y : $g_p=f(g_y)$. Then, this function implies that price-level, P, is a function of real gross domestic product, y : $P=h(y)$.

Equation 3, thus provides valuable information on the development processes. It is also a link between the monetary sector and

---

* Institute of Statistical, Social and Economic Research, University of Ghana, Legon, Ghana.

the real sector. Price-level depends on money-supply. On the supply side, increase in supply of money induces a rise in price-level, other things remaining the same. On the demand side, an increase in price level tends to increase (transactions) demand for money, other things remaining the same. The supply of and demand for money are also affected by real gross domestic product as shown in equation (1) and (2). A change in real gross domestic product introduces a change in money. A change in real gross domestic product also induces a change in price-level as in equation (3). An induced change in money leads to a change in the price-level. The prime-mover is the real gross domestic product in the monetary sector. Given real gross domestic product from the real sector, money supply variable is determined by the equations (1) and (2), with the use of equation (3). The implication of this model is that the monetary sector, where the variation in money supply takes place, does not affect the real sector, and so, the monetary authorities are not in a position to initiate change in real gross domestic product by a change in M. In Equation (1), supply of money in current period depends on real gross domestic product of the past period. If real gross domestic product rises in the immediate past, supply of money rises in the present. The reversibility of this operation is not easy to visualise. A decrease in real gross domestic product in the present should be followed by a reduction in supply of money in the next. But, how ? —can the monetary authority reduce supply of money ? In an underdeveloped economy, credit creation by commercial banks is limited by the currency reserve base. Currency used by the public is a high proportion of total money, about 50%. Hence, the role of credit is severely limited in the manipulation of supply of money. That is, monetary authority may not be in a position to use monetary weapons, such as bank rate and reserves, to effect a desired change in total money supply through a change in credit. Anyway, for a long-term model, this reversibility is not important. It is the objective of every nation to increase real gross domestic product.

One of the remaining equations (4) is not really an equation : it is an identity, that is, it holds good by definition ; the last equation, Equation (5), indicates equilibrium condition.

Empirically, the first three equations are estimated by Ordinary Least Squares method. The results are shown in Table 5. Since time series data are used for the variables y_t, P_t and M_t, all the variables are treated for trends. The trend equations are shown in (A) to (D).

The specification of a model is of paramount importance in an econometric study like the present one. The specification of a model comprises the following: What variables to include and in what form—as endogenous or exogenous ?—how many equations to include—this is dependent on how many variables are to be regarded as endogenous—what functional forms the equations are to take—in almost all cases a model includes linear function of variables as is done in this study, because of difficulties with non-linear functions to deal with in indentifying, in estimating and in inferring statistically. How to decide whether a variable is to be endogenous or exogenous ? Economic theory may fail in some cases. Then, other devices may be adopted. One such device is suggested by Sims, (5) for testing causality between two variables X and Y. Regress Y on X with past and future values of X as well: if future X is not important in explaining the variation in Y, then the direction of causality lies from X to Y; if future X is important in this trial regression, the direction of causality lies from Y to X. There are serious practical problems in estimating a regression equation involving lagged (independent, in the present testing procedure) variable X, since lagged variables are unlikely to be independent of one another as is required in a regression analysis. One suggestion to tackle the problem is formulated by Almon (6) and is widely used. To tackle the problem of serial correlation in the variables and in the stochastic term for valid estimation of the regression coefficients, the following estimation method may be adopted: either (a) Aitken's Generalised Least Squares method [See Johnston, (7)], or (b) by prefiltering through a filter as suggested by Sims. Sims has developed an equation which serves to filter the time series data on a variable and maintains that "This filter approximately flattens the spectral density of most economic time series, and the hope was that regression residuals would be very nearly white noise with this prefiltering," (white noise is a serially uncorrelated process).

In the present study, however, it is not possible to apply Sims' test, since the sample used for the study is small, so that the formulation of the regression equation with lagged values of the independent variable would leave very few degrees of freedom to work with for statistical inference. For an underdeveloped economy like Ghana, it is not far from truth to say that money supply (M) depends more on real gross domestic product (y), than the other way round [Ghosh, 8]. Similarly for price-level (P).

Mathematical and Statistical Development of the Model

In my paper "Statics, Dynamics and Economics", (*Economic Affairs*, January-February, 1975, Vol. 20, No. 1-2) a mathematical and statistical development of the same model has been given. There, it has been shown that the complementary equation of the resultant difference equation has conjugate complex roots. The time-path of y. the gross domestic product at constant prices, moves around the equilibrium value of y, that is, $\bar{y}$. It has also been shown that $\bar{y}$ as particular integral of the difference equation is a function of time.

Conclusion

In this study, the models are highly aggregative—in fact, aggregative for the whole of the economy. At disaggregated level, a model would throw light on sub-sectors of the economy. For policy-matters, these disaggregated models are likely to be more detailed. There are valid arguments in favour of both the aggregated and disaggreated models. Confining our attention to the aggregate model presented in this study, it can be seen that money supply depends on real gross domestic product on the supply side. The policy implications are that the monetary authorities are to watch for the movement of real gross domestic product of the past period, if they effect a change in money supply. However, not all of the changes in real gross domestic product could be responsible for change in money supply. A part of this real gross domestic product is related to subsistence output and belongs to the non-monetised sector. As has been explained in previous pages, increase in subsistence output does not require a change in money supply. The coefficient of y_{t-1} in Equation (1) takes into account this fact, since y_{t-1} includes subsistence output also. An increase in one unit of real gross domestic product in the past would require an increase of 1.77 units of money supply in the present period. On the demand side, an increase in one unit of gross domestic product at current price would lead to an increase of 0.16 unit of money supply.

References

1. Ghosh, Ranen : The Quantification of Seasonality of Money Supply in Ghana, Technical Publication Series No. 28, Institute of Statistical, Social and Economic Research, Legon, 1972.
2. Park, Yung Chul : "The Role of Money in Stabilisation Policy in Developing Countries," IMF Staff Papers, Vol. xx, No. 2, July, 1973,

(Continued on page 153)

Table 3

Gross Domestic Product by Industrial Origin

Year	Agriculture	Mining	Manufacturing	Construction	Oil & Fuel	Transport and Services	Total
1960	51.8	4.5	1.9	3.8	—	38.0	100.0
1968	38.6	2.2	7.6	3.6	2.3	45.7	100.0

Table 4

$$\text{Per capita income}=\frac{J_0+J_1t+J_2t^2+J_3t^3}{Rt}$$

(For trend equation of y_t see Section 3 below)

Year	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Per Capita Income	140.85	145.39	147.20	147.22	146.33	144.48	142.54	140.93	139.88	139.89

Table 2

Year	Share of agric. income in total income	Population (Million)	Per Capita G.D.P. At constant prices (1960)	At current prices (G. Currency)
1960	45.4	6.73	142·12	142.12
1961	43.2	6.90	143.44	148.08
1962	42.4	7.08	146.59	154.49
1963	41.5	7.27	147.83	166.27
1964	41.0	7.45	147.17	182.05
1965	40.2	7.65	145.40	210.25
1966	39.7	7.85	141.84	228.50
1967	39.1	8.05	140.73	220.85
1968	38.7	8.26	139.10	250.24
1969	37.4	8.47	140.41	274.69
Sample Average	40.86	7.571	143.463	197.754

Table 5

Regression No.	1	2	3
Variable			
y_{t-1}	1.7687		
	(t=3.683)		
Y_t		0.1580	
		(t=2.580)	
y_t			−0.0006
			(t=0.197)
P_t			1
M_t	1	1	
t		−4.0374	
		(t=0.860)	
t^2			
Constant term	2.2638	−34.2366	−0.000
	(t=0.688)	(t=0.384)	(t=0.000)
Durbin-Watson d	2.238	2.505	1.9045
R^2	0.6596	0.9708	0.0048
		−0.6103	
		(t=3.594)	

(Concluded)

References (Contd.)

3. Ghose, Ranen : "Inflation and Economic Growth in Underdeveloped Countries : Statistical Evidence." Mimeo, May, 1974.
4. Walters, A. A. : An Introduction to Econometrics, McMillan 1968.
5. Sims, C. A. : "Money, Income and Causality," American Economic Review. September, 1972, pages 522-40.
6. Almon, S. : "The Distributed Lag between Capital Appropriations and Expenditure," Econometrics, Vol. 30, 1965, pages 178-196.
7. Johnston, J. : Econometric Methods, 2nd Edition, 1972, Mcgraw. Hill, Inc.
8. Ghosh, Ranen : "National Income and Money Supply in India, 1951-63 : An Econometric Study," Economic Affairs, Vol. 15, No. 4.
9. Levy, H. and Lessman, F. : Finite Difference Equations, 1959. Sir Isaac Pitman and Sons Ltd., London.
10. Goldmith, Raymond W. : The Determinants of Financial Structure. OECD, Development Center, Paris, 1966.
11. Mukherjee, M. : "The Role of Transactions in Kind in Developing Economies," The Review of Income and Wealth, Series 13, No. 4, December, 1967, Pages 335-51.
12. Tobin, J. : "Money and Economic Growth," Econometrics," October, 1965.
13. Crouch, Robst : "A New Approach to the Monetisation of Neoclassical Growth Models," in Econometric Studies of Macro and Monetary Relatives, edited by Allen A. Powell and Ross A. Williams, North Holland Publishing Co., London, 1973.
14. Christ, C. : Econometric Models and Methods, John Wiley & Sons, Inc., New York, 1966.
15. Durbin, J, and Watson, G. S. : Testing for Serial Correlation in Least-Squares Regression, Biometricka, 1950, 1951.
16. Kontsoyiannis, A : Theory of Econometrics, McMillan Press Ltd., 1973.
17. Wheetham, E. H. and Jean J. Currie : The Economics of African Countries, Cambridge at the University Press, 1969.
18. Klein, L. R. : An Introduction to Econometrics, Prentice-Hall, International, London, 1962.
19. Allen, R. C. D. : Mathematical Economics, Chapter 6 ; McMillan & Co. Ltd., London, 1959.
20. Vakil, C. N. and P. R. Brahmanand : Planning for an Expanding Economy, Vora & Co., Private Ltd., 1956.
21. Dutta, Bhabatosh : The Economics of Industrialisation, 2nd edition, The World Press Private Ltd., Calcutta, 1957.

Economics of Farming of Small Farms with owned Bullocks vis-a-yis Hiring of Tractor Services

S. S. Grewal and J. S. Chamak*

Due to the influence of several factors, of which the increased population is the most important, the farm size in our country is dwindling very fast. Already, there are a large number of small and marginal farms which are mostly economically unviable units and the Government through SFDA and MFALA schemes is extending help to such units. The number of such farmers is increasing rapidly. Due to smallness of farm size, such farmers may not find it worthwhile to incur expenses on maintenance of bullocks to provide the draft power. We have to look for cheaper alternatives in this matter.

In state like Punjab, there is a sizeable population of tractors. In most cases, the volume of work with the tractor owners is not sufficient to make full utilisation of the tractor. The farmers have to look for custom work outside their farms to make proper utilisation of the machines. The future owners of tractors would mostly belong to this category. There appears to be a good scope for availability of tractor custom hiring services from private operators besides the public agencies like Agro-Industries Corporation and MARKFED, etc. Already, there are several small farm operators who are depending on custom hiring services, although such facilities are quite limited in extent at the moment. The persent analysis has been attempted to know the gain or loss that shall accrue to the farmer in case he maintains no bullocks and depends upon custom-hiring of tractor services for draft purposes.

A partial budgeting exercise was carried out for a bullock-operated farm of 7 acres, because it is hypothesized that it is this type of small category of operators who might find it profitable to dispense with the bullocks in favour of hired tractor services. The data used here are based on the information collected from ten farms located in two purposively selected villages of Ludhiana district. These farmers carried on farming purely with the help of hired tractor services.

---

* Department of Economics and Sociology, Punjab Agricultural University, Ludhiana.

Assumptions for the Analysis

i) There is no difficulty in hiring tractor services. No doubt, this is very bold assumption but we believe that in course of time, the availability of custom hiring services would increase and most of the farmers would be able to avail such facilities according to their needs.

ii) The custom hiring rates for machine services would follow the behaviour observed during the earlier years, i.e., there would be no unusual rise in the custom charges.

iii) The farm operator's cropping pattern, level of use of inputs and productivity shall remain unchanged on switcing over to cultivation with hired tractor service with the only difference that he will put relatively less area under fodders.

Changes in the Farm Organisation

There are likely to be some changes in farm organisation consequent upon the withdrawal of draft animals from the farm. The farmer needs bullocks for operations of preparatory tillage, sowing, transportation of manures, farm produce and fodders, etc. The farmer shall have to incur additional expenditure on these items when he is without bullocks. But at the same time, he shall save on the cost of maintenance of bullocks as well as some extra expenses on bullock driven implements which include bullock-cart, ploughs and planks, etc. He will also economise on human labour, because in performing operations with bullocks a much larger input of this labour is required compared to the situation when the same operations have to be performed with the hired tractor and operator. Likewise, the farmer would be able to save some area from fodders and divert the same to more remunerative crops. These additional costs and gains shall have to be taken into account in arriving at the overall gain or loss.

Framework for Analysis

The cropping pattern for a typical farm located in the central districts of Punjab being operated with bullocks and later switching over to hired tractor services is shown in Appendix 1. The cropping pattern in the two cases is similar except that the farmer when he is maintaining bullocks, has more area under fodders to the extent of 0.50 acre in *kharif* season and 0.25 acre in *rabi* season. On switching over to cultivation with hired tractor, the same area has been diverted to growing of cotton *desi* in *kharif* season and wheat in *rabi* season.

The per acre operation-wise custom hiring charges for each crop and for the farm as a whole are listed in Table 1. The saving in human labour due to the introduction of a tractor is also shown in the table.

The total cost which a farmer is to incur during the year on hiring of tractor services works out to Rs. 1942.87. As already mentioned, the farmers without bullocks have to incur some additional expenditure for transportation of fodder by way of relatively more human labour input. This cost has been estimated at Rs. 362.00. per year.

By eliminating the bullocks, the farm operator shall gain in some ways. Firstly, he would economise on human labour to the extent of Rs. 439.25 per annum (Table 1). Also, he would gain on account of saving some land from fodders and would grow more paying crops instead. The net income from the area thus saved works out at Rs. 678.50 per annum. Also, the farmer would not be required to incur maintenance costs for bullocks by way of feeds, concentrates, upkeep labour and other allied costs. The cost of maintaining a pair of bullocks works out to Rs. 1476.35 per year.* The interest charges and depreciation on the additional equipment (bullock cart, yokes, plough, etc.) were estimated at Rs. 426.75 per annum.

The final picture of added costs and gains is summarized in Table 2. The total additional cost to be incurred by the farmer adds up to Rs. 2304.87 per annum. The maintenance cost of a pair of bullocks is estimated at Rs. 1476.35 per annum and this cost is a saving to the farmer when he switches over to cultivation with hired tractor. Likewise, he saves an expenditure amounting to Rs. 426.75 by way of interest and depreciation as mentioned earlier. Further, there is an addition to the income of the farmer to the extent of

* Maintenance cost includes the cost of inputs used in raising fodders, upkeep labour, depreciation and interest on bullocks and cattle sheds, veterinary charges minus the value of dung produced.

Source : Comprehensive scheme for studying the cost of cultivation of principal crops in Punjab, Dept. of Economics & Sociolgy, PAU, Ludhiana.

1117.75 per annum by way of saving of land from growing of fodders and raising alternative crops and also on account of less human labour input with the tractor. Taking the total credits and debits into account, the overall net gain to a 7-acre farm by switching over to cultivation with hired tractor services adds up to Rs. 715.98 per annum.

Economical upto what Level ?

It is seen that a 7-acre farm operating with bullocks saved to the extent of Rs 715.98 on switching over to cultivation with hired tractor services. The per acre expenditure for hiring tractor services amounts to Rs. 277.55. With the above savings, he could operate a little over 2.5 acres more. Thus the break-even point in case of cultivation with owned bullocks versus hiring of tractor services comes to about 9.5 acres.

Conclusion

The above analysis brings out that the small and marginal farmers would find it profitable to eliminate bullocks as source of draft power, hired tractor services are available to them according to need and in time. This would also be in the larger national interest as it would save land from fodders which would be available for growing more foodgrains.

No doubt, custom hiring facilities are available with the private owners of tractors in the villages. But such facilities are very much limited at the moment. To supplement and strengthen these facilities the Govt. should considarably expand the customs hiring facilities by encouraging the establishment of more Agro-Service Centres at strategic locations in the villages. This will help in switching over a large number of small and marginal farmers to cultivate with hired machinery. It will also eliminate drudgery associated with farming when cultivation is done with bullocks.

Table 2

Partial Budget Showing the Economics of Running a 7-acre Farm with Hired Tractors ;

Debits	Rs.	Credits	Rs.
(1) Added cost	2304.17	(IV) Savings in cost	1903.10
1. Custom hiring charges for tractor services	1942.87	1. Maintenance costs of a pair of bullocks.	1476.35

Table 1 : (Contd.)

Debits	Rs.	Credits	Rs.
2- Additional expenditure on transporation of fodder	362.00	2. Interest and depreciation on additional equipment	426.75
		(V) Addition in Income	1117.75
(II) Reduction in Income	—	1. Saving in Human Labour	439.25
		2. Income for land saved from fodders	678.50
(III) Total debit (I+II)	2304.87	(VI) Total credits (IV+V)	3020.85
		Net gain (VI—III)	715.98

APPENDIX

Cropping Pattern for a 7-acre Farm

Crops	With bullocks Area (acres)	Without bullocks Area (acres)
Kharif season		
Maize	3.25	3.25
Groundnut	1.00	1.00
Fodder	1.50	1.00
Cotton desi	1.25	1.75
Rabi season		
Wheat	6.25	6.50
Barseem fodder	0.75	0.50

Table 1

Incidence of Custom Charges and Saving in Human Labour due to Hiring of Tractor

Crops	Operation-wise Charges (Rs)					Total Custom charges (Rs)		Saving in Human Labour (Rs)	
	Ploughing	Planking	Sowing	Transportation of F. Y. M.	Transportation of produce	Per acre	Per farm	Per acre	Per farm
Maize	60.00	10.00	20.00	32.00	18.00	140.00	455.00	22.50	73.12
Groundnut	40.00	10.00	20.00	—	20.50	90.50	90.50	15.50	15.50
Cotton desi	40.00	10.00	20.00	—	17.50	87.50	153.12	15.50	27.13
Kharif fodder	40.00	10.00	20.00	—	*	70.00	70.00	15.00	15.50
Wheat	80.00	20.00	20.00	5.00	45.50	170.50	1108.25	45.00	292.50
Barseem fodder	80.00	20.00	—	32.00	*	132.00	66.00	31.00	15.50
						1942.87			439.25

Note : 1. The custom hiring charges for different operations have been taken as under :

i. Ploughing with tiller Rs. 20.00 per acre
ii. Planking „ 10.00 „ „
iii. Sowing with seed-cum-fertilizer drill „ 20.00 „ „
iv. Transportation of F. Y. M. „ 8.00 per trolly
v. Transportation of produce to market „ 1.50 per quintal

2. Hired bullock services are assumed to be made use of sowing operations of crops like maize, groundnut and cotton desi.

3. Additional expenses on account of transportation of fodder have been accounted for in Table 2.

Changes in the Distribution of Land Holdings in West Bengal

P. K. Chatterjee and Dhruba Ranjan Mukherjee*

Land being the primary asset, and dependence of the majority of our people on land for their life and living being overwhelming, distribution of land holdings turns out to be a major factor determining the distribution of income and welfare in the country. Changes in the structure of land holdings imply significant structural changes in the economy and have far-reaching economic and social consequences.

The present paper attempts to analyse change in the distribution of operational holdings in the State of West Bengal. Two aspects of the changes are particularly considered.

i) Changes in the number of marginal, small, semi-medium, and large farms and in the area operated by them ; and

ii) Changes in the overall distribution as indicated by Lorenz curves and Gini coefficients. The study is based on data presented in in the 8th Round, 16th Round and the 17th Round NSS reports and in the Report on Agricultural Census (1970-71). Differences in the concepts and mesurements in respect of data from different sources have been carefully noted and comparability has been ensured as far as possible.

For the first three periods (1953/54, 1960/61 and 1961/62) we have considered "household operational holdings'. In the tables presented in the Agricultural Census Report (1970/71) there is no specific reference to 'household operational holdings' ; a distinction has, however, been made between 'individual holdings' and 'joint holdings'. An operational holding managed by persons belonging to only one household has been taken as an individual holding, while that managed jointly by two or more persons belonging to different households as a joint holding. Therfore, for the purpose of analysing intertemporal changes we have considered data concerning only individual holdings in 1970-71 census.

---

* Reader in Economics, Kalyani University, Kalyani, West Bengal, and Lecturer in Economics, Kalyani University, Kalyani, West Bengal.

Further, the units of measurement of the size of holding have also been different. Data on farm sizes in respect of the first three periods mentioned above have been expressed in acres while farm sizes have been measured in hectares in the 1970-71 census. Accordingly, there are minor discrepancies in the mesurement of different categories of holdings under the two unites of measurement. Holdings have been classified into five categories depending on their sizes. The categorization is based on 1970-71 census and is indicated in Table 1.

Table I

Categorization of Holdings by Size

Category of holdings	Size of Holdings
Marginal	Upto 2.49 acres/1 ha
Small	2.50-499 acres/1-2 ha
Semi medium	5.00-9.99 acres/2-4 ha
Medium	10.00-24.99 acres/4-10 ha
Large	25 acres and above/10 ha and above.

Note : 1 ha=2.47106 acres.

The proportion of marginal holdings significantly declined from 65.16 p.c. in 1953-54 to 59.97 p.c. in 1970-71 but the proportion of area covered by them increased from 14.39 p.c. to 22.38 p.c. over the same period. The proportion of area covered by marginal holdings, slightly declined (by less than 1 p.c.) between 1953-54 and 1960-61. Decline in the proportion of marginal holdings and increase in the proportion of area covered by them are suggestive of an increase in the average size of the marginal holdings or an improvement in the economic-base of the marginal farmers. While the total number of relevent households of all categories covered increased by 388 thousand, between 1953-54 and 1960-61, the number of households operating less then one acre of land declined marginally by 16 thousand, and the average area commanded by each household in this category also decreased from 0.20 acre to 0.12 acre over the same period. In 1970-71, the total number of individual holdings operating over less than 0.5 hectare of land was found to be smaller than the corresponding numbers in 1954-54 and 1960-61. The average size of holding for this class was found to be around 0.6 acre. The average size of marginal farms remained more or less the same between 1953-54 (0.59 acre) and 1960-61 (0.57 acre) but increased significantly to a little over 1 acre in 1970-71. Thus there was marked improvement in the asset position of the maginal farmers caused by a decrease in their numbers and an increase in the area of land covered by them. *Decline in the proportion of marginal farmers* may be due to (a) the degradation of a section of marginal farmers to the status of landless labourers neither owning nor operating any land, or (b) their upgradation to the next higher status through acquisition of more land. Increase in the proportion of area covered by marginal farms may be due to accrual of land released through various land reform measures to the marginal holdings. Or, it may be due to the continuous sub-division of larger holdings and their eventual categorization as marginal ones. Presumably, as a result of the upgradation of a section of marginal farmers, the proportion of marginal holdings to the total number of holdings declined, and due to acquisition of more land within the limits of the category by the remaining marginal farmers, the proportion of area covered by the marginal holdings increased.

Table II

Distribution of Operational Holdings by Size Class, West Bengal

Percentage distribution

Category of Holdings	1953-54[a]		1960-61[b]		1961-62[c]		1970-71[d]	
	Households	area	Households	area	Households	area	Households	area
Marginal	65.16	14.39	61.68	13.40	63.57	13.88	13.97	22.38
Small	17.52	23.27	20.55	28.15	19.62	27.98	22.11	26.74
Semi-Medium	12.15	31.38	12.96	33.41	12.31	33.32	13.42	30.08
Medium	4.70	25.28	4.68	23.27	4.29	23.41	4-42	20.00
Large	0.47	5.68	0.13	1.77	0.21	2.14	0.08	0.80
Total	100.00	100.00	100.00	100.00	100.00	100,00	100.00	100.00

Sources :

a. The National Sample Survey, Eighth Round, No. 66, Table 4.7.

b. The National Sample Survey, Sixteenth Round, No. 159, Table 10.15.

c. The National Sample Survey, Seventeenth Round, No. 144, Table 7.15.

d. All India Report on Agricultural Census, 1970-71, page 240.

The proportion of small farms increased from 17.52 p.c. to 12.11 p.c. between 1953-54 and 1970-71 ; the proportion of area operated by them also increased from 23.27 p.c. to 26.74 p.c. over the same period. The proportion of area covered by small holdings was, however, a little higher in 1960-61 (28.15 p.c.) than in 1970-71. Between 1953-54 and 1960-61 the number of small farms increased both absolutely and relatively. The relative increase was also revealed by 1970-71 data.

The average size of small farms increased slightly from 3.58 acres to 3.65 acres between 1953-54 and 1960-61. The average size of small farms was estimated to be around 3.41 acres in 1970-71. This moderate decrease in the average size appears to be significant in spite of the slightly different measures of the same category of farms in (a) 1953-54 and 1960-61 (2.50-4.99acres) and (b) 1970-71 (2.47-4.94 acres). Increase in the proportion of small holdings in terms of both the number and the area covered may be due to (a) upgradation of a section of marginal holdings into the category of small holdings, or (b) subdivision of larger farms into smaller farms, or both, The first argument is strengthened by the evidence of data on the marginal holdings, the second one is also supported, as we shall soon note, by the data on medium and large holdings.

The proportion of semi-medium holdings increased, but not much, from 12.15 p.c. of the total number in 1953-54 to 12.96 p.c. in 1960-61 to 13.42 p.c. in 1970-71. While the proportion of area coverd by them increased from 31.38 p.c. to 33.41 p.c. between 1953-54 and 1960-61, the trend was definitely reversed in course of the next decade over which the proportion of area covered by the semi-medium holdings declined to 30.08 p.c. The average size of semi-medium farms declined from 6.96 acres in 1953-54 to 6.86 acres in 1960-61 to about 6.48 acres in 1970-71.

The proportion of medium holdings to the total number did not change much from 1953-54 (4.70 p.c.) through 1960-61 (4.68 p.c.) but the proportion of the total area covered by them fell steadily from 25.28 p.c. in 1953-54 to 23.27 p.c. in 1960-61 to 20.00 p.c. in 1970-71. The number of medium farms declined both absolutely and relatively between 1953-54 (through 1960-61) and 1970-71. The average size of this category of farms declined significatly from 14.48 acres in 1953-54 to 13.20 acres in 1960-61. Between 1960-61 and 1970-71 there was little change in the average size of this category of farms.

The proportion of large holdings as well as the proportion of area covered by them declined significantly from 1953-54 through 1960-61 to 1970-71. The number of large farms declined substantially was not only relatively but also absolutely from 20,000 in 1953-54 to 6000 in 1960-61 to 3130 in 1970-71. The average size of the large farms, however, increased from 32.75 acres to 35.5 acres between 1953-54 and 1960-61 but declined appreciably to about 30.8 acres in 1970-71.

The nature and direction of changes of the relative importance of different categories of holdings over the last two decades are indicated in Table III.

Table III

Changes in Relative Importance of Different Categories of Holdings, West Bengal

Category of holdings	p.c. of total					
	1953-54 to 1960-61		1960-61 to 1970-71		1953-54 to 1970-71	
	No.	Area	No.	Area	No.	Area
Marginal	decrease	decrease	decrease	increase	decrease	increase
Small	increase	increase	increase	decrease	increase	increase
Semi-Medium	increase	increase	increase	decrease	increase	decrease
Medium	decrease	decrease	decrease	decrease	decrease	decrease
Large	decrease	decrease	decrease	decrease	decrease	decrease

Steady and significant decline in the relative importance of medium and large farms was primarily due to ceiling on land holdings. In West Bengal, the land ceiling has been fixed at 12.4 to 17.2 acres.

Economic planning in a democratic welfare state like India naturally has reduction in the inequality in the distribution of income and wealth as one its major objectives. Land is the primary source of employment and income for the majority of our people. As such fulfilment of the above objective depends to a substantial extent on the changes in the concentration of landholdings in the country. To study changes in the concentration of landholdings we have made use of Lorenz curves and Gini coefficients.

The Lorenz curves study shows the percentage of area operated by the bottom x p.c. of the households with x varying from 0 to 100. If the Lorenz curve of one distribution is uniformly higher than that of another, we have no difficulty in respect of the measurment of inequality. But sometimes two distributions do not have this property and the Lorenz curves may cross. The Gini coefficient measures the distance between the diagonal line of equal division and the Lorenz curve. Unlike Lorenz curves comparisons, the Gini coefficient comparisons are always conclusive since the relationship between the real numbers can always be unambiguously determind. However, the class of welfare function corresponding to the Gini coefficient is highly restrictive.

In this connection we may take note of the axioms that are necessary and sufficient for the planner to minimize the Gini coefficient.[1]

Increase in the proportion of total area operated by marginal and small holdings and decline in the proportion of area covered by medium and large holdings, noted earlier in this paper, indicate concentration of land holdings. This suggestion is further confirmed when we analyse the data with the help of Lorenz curves and Gini coefficients. The Lorenz curves show a decline in the concentration of land holdings. The Gini coefficients conclusively confirm substantial reduction in inequality in the distribution of land holdings area over nearly two decades from 1953-54 (0.65) to 1960-61 (0.62) to 1970-71 (0.51). Decline in the concentration was more marked in the second period than in the first period. This was only expected since the progress of land reforms was more marked in the later phase than in the earlier phase.

If farms below the size of 1 to 1.25 acres are considered as uneconomic units, about 48.55 p,c. of the households operated uneconomic holdings in the country in 1953-54 ; in other words, nearly half of our farmers were too poor to make their both ends meet, particularly because productivity of land was also very low at that time. The proportion of individual holdings below 0.5 hectares decline to 36.94 p.c. in 1970-71 suggesting significant decline in the number of farm operators living below the line of viability, particularly when considered the increase in land productivity attained by 1970-71. On the other hand, land in uneconomic holdings cannot be efficiently or optimally used. Proportion of land in the category of uneconomic holdings declined from 3.90 p.c. to 2 p.c. between 1953-54 and 1960-61 but thereafter increased substantially to 7.81 p.c. by 1970-71. This development indicated an increase in the extent of inefficient use of the most important input of our most basic economic activity. This is a dimension of land reform which should be taken proper care of by the planners.

Note : 1. Amartya Sen, Poverty, Inequality and Unemployment : Some Conceptual Issues in Measurement, Economic and Political Weekly, Special No. August, 1973.

(Continued from page 136)

rating normative shifts in the cropping schemes. Further, farm organisations using electric motor for stationary work earn 10.5 per cent more profits as compared with those using diesel engines for this purpose. Again, when both field and stationary operations are mechanised, the use of 14.0 h.p. tractor for field work and a 5.0 h.p. electric motor for stationary jobs yields 6.9 per cent more returns than the farms where a 14.0 h.p. tractor is employed as a versatile machine for both field and stationary operations, and 9.7 per cent higher than those with a 5.0 h.p. diesel engine for stationary work and a 14.0 h.p. tractor for field jobs. Farms operated with a 14.0 h.p. tractor alone earn 2.6 per cent more than those equipped with a 14.0 h.p. tractor and a 5.0 h.p. diesel engine. The extended use of surplus power machinary partly through renting-in of additional land and partly through custom-work on other farms increases income on mechanised farms. These findings are a clear indication of the need for rational decision-making in the choice of power-machine combinations for individual farm organisations. In fact, the immediate problem facing the Punjab farmers today is the lack of availability of matching equipment for the power units they have already acquired from the market. In the long-run, however, the agricultural engineers would have to design and develop new power-machine combinations suiting the pockets and requirements of the farming community. Further, new and diversified uses of available power-machinery will have to be discovered for their extended use so that per unit over-head costs associated with this equipment could be kept as low as possible.

Economic Implications

Controversies have been raised from time to time about the impact of mechanisation on productivity and employment in Punjab agriculture. The results of recent studies provide evidence that mechanisation contributes to increased productivity while at the same time involving little displacement of human labour on Punjab farms. In the central plains and south-western districts of the Punjab State, the output per unit area is higher on tractorised farms than the bullock operated ones. It is particularly so when the tractor operated farms are compared with the large bullock operated holdings. The average returns on the former category of farms are 28.47 per cent higher than the latter. The higher income on tractor holdings is attributed to shifts in the cropping patterns in favour of more remunerative enterprises, increased cropping intensity, higher expenditure on the yield increasing technology, and better preparation of land, timely performance of operations and better placement of seeds and fertilizers. The study of the comparative statistics of labour input per hectare on the two types of farm organisations suggests that, on the whole, labour use is slightly (1.96 per cent) higher on the mechanised farms as compared with the bullock operated organisations. An additional support to these results is provided by the quantitative analysis of the impact of farm size and technological inputs on the level of human labour employment in Ferozepur district at two points of time, viz., the beginning of the green revolution period (1967-68) and the post-green revolution period (1973-74). This financial analysis brough out that the expenditure on farm machinery and equipment did not significantly influence labour employment in both the years. Employment was, in fact, affected by farm size, expenditure on seed and insecticides, fertilizers and irrigation. The variable for fertilizer use did not, however, turn out significant in 1973-74.

Thus, recent studies support the hypothesis that farm mechanisation in the Punjab has increased productivity by facilitating the intensive use of such crucial and technological inputs as irrigation, fertilizers, pesticides and multiple cropping without effecting human labour employment. It is, however, feared that if mechanisation is extended too far and such big machines as combines are introduced on a very large scale, farm labour employment would be adversely affected. It has been found that wheat harvesting with combine requires only 1.85 mandays per hectare as against an average of 22.23 mandays with other methods of harvesting and threshing. But such sophisticated power machinery has not yet been extensively used in the State and hardly 2 per cent of the wheat crop is being harvested with it.

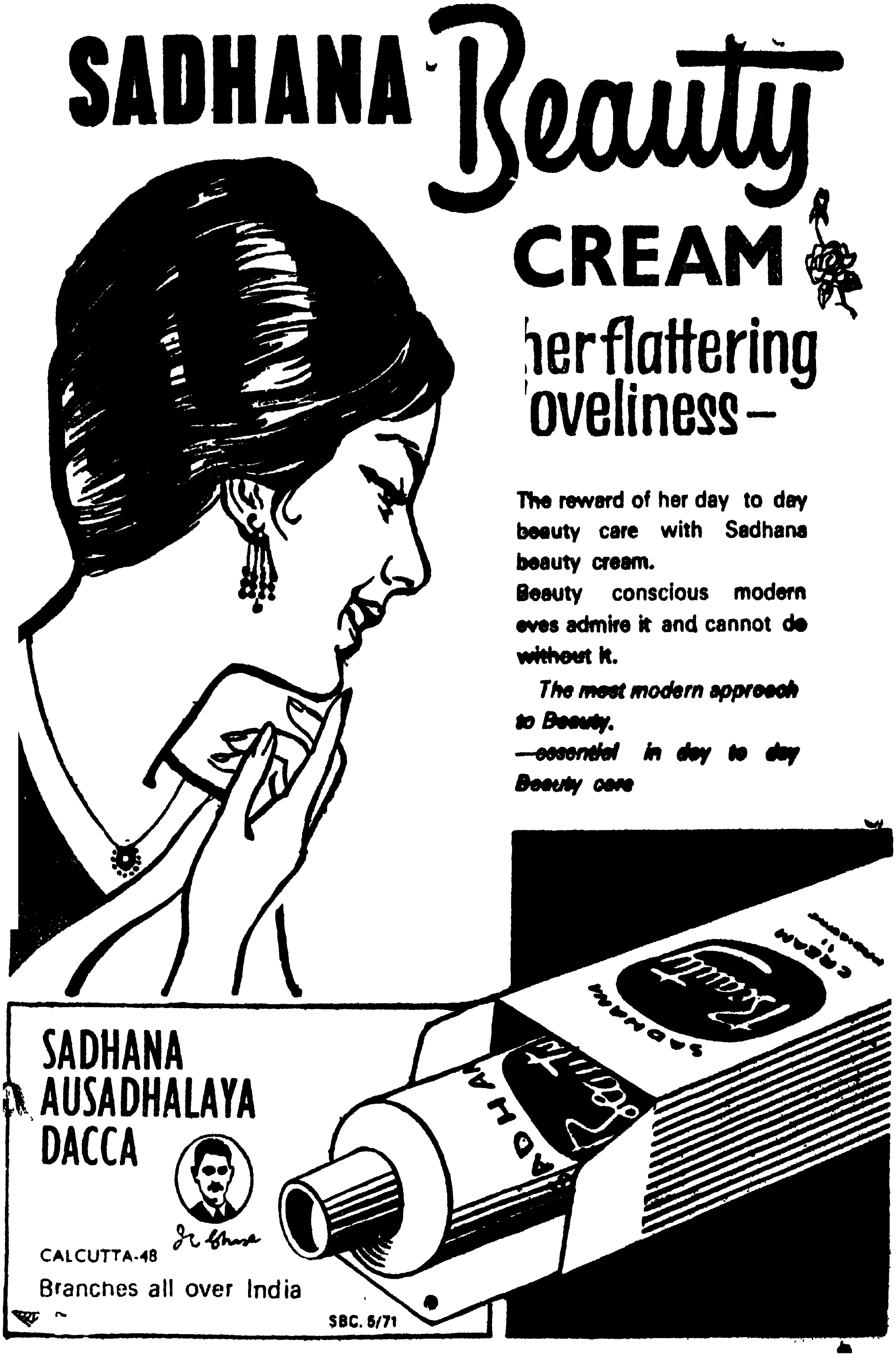
It can now be observed that the concept of stationary power use which is new in most parts of the world has come to stay in Punjab where a large number of such stationary power units as diesel engines and electric motors have been installed by the farmers on their individual holdings for lifting underground water for providing assured irrigation to their crops and mechanising such stationary operations as threshing of wheat and shelling of maize enterprises. Tractors are also used for this purpose. But in most cases, these are employed as mobile source of power to mechanise field jobs like tilling, seeding and fertilizing, interculturing, harvesting, and transportation of the produce to the market. The mechanisation of selected farm operations is likely to expand in the future particularly because the controversies about its impact on human labour employment on individual holdings have been set at rest. Again, the contribution of this input alongwith the use of other technological inputs to farm productivity has been fully established. Further, the process of progressive mechanisation of selected operations is likely to be speeded up with the setting up of a net-work of Agro-Service Centres and the extension of the fleet of mobile service vans of the Agro-Industries Corporation for taking up repairs of farm power and machinery in the villages. Besides, the recent developments in the country have eased the situation in the spare parts market so much so that anything can now be procured without having to make over payments. Such a situation is bound to give further impetus to the mechanisation of crop farms in the State. These trends would likely pose serious challenges to the agricultural engineers for designing and development of prototypes of power machinery which could satisfy the growing aspiration of the community in this direction. Such machinery, for obvious reasons, would have to be cheap and relatively less sophisticated so that it could be handled by an ordinary farmer after a small training.

WOLRD POPULATION

The world's population totalled 3,967 million in mid-1975, showing an increase of 77 million in a year. If that 1.9% annual growth rate is maintained, the global population will double in 37 years.

According to the latest figures, more than half the world's population—2,256 million or 56.9—lives in Asia. Some 473 million, or 11.9%, live in Europe, 401 million (10.1%) in Africa, 324 million (8.2%) in Latin America, 225 million (6.4%) in the Soviet Union, 237 million (6%) in North America and 21.3 million (0.5%) in Oceania.

The most rapid population growth is taking place in Africa, where the annual rate is 2% or more in 40 of the 47 countries or areas for which figures are available. Ten of them have rates of 3% or above. In Europe, 26 out of 37 countries reported an annual increase of less than 1%. Sweden has the lowest infant mortality rate -8.3 for every 1.000 live births—followed by Finland (10.2), Norway (10), Netherlands (10.6) and Japan (10.8).



SADHANA Beauty CREAM

her flattering loveliness –

The reward of her day to day beauty care with Sadhana beauty cream.

Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.

—essential in day to day Beauty care

SADHANA
AUSADHALAYA
DACCA

CALCUTTA-48
Branches all over India

SBC. 5/71

Annual
Inland Rs. 30.00 (Net)
Foreign US $10.00
Postage by surface
US $2.00
This Copy Rs. 2.50

REGISTERED NO. WB/NC 80
R. N. No. 5182/57

Published by H. Roy from 10, Galiff Street, Block 5, Suite 64, Calcutta-3
and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh
Lane, Calcutta-6. **Editor : Himansu Roy. Phone : 55-0477**

ECONOMIC AFFAIRS

- Capital Formation in Meiji Japan: A Case for the Bond Commutation
- The Causes of Women's Unemployment in India
- A New Strategy for India in New Era

Vol. 22, No. 5 MAY 1977

Revised Annual Subscription Rates :

India :	**Rs. 30.00**
Foreign :	**US $ 10.00**
Postage :	**$ 2.00 (by surface)**
Single Copy (ordy.)	**Rs. 2.50**

Outstation cheques shall bear Rs. 5.50 extra.
Effective from January 1977.

Sd/ M. ROY
Manager,
Economic Affairs

15 September 1976

GOVERNMENT OF INDIA PUBLICATIONS

USEFUL BOOKS

●	Index to Indian Medical Periodical—July-December, 1972	Rs. 114.50
●	Manual of Election Law (Eighth edition)	Rs. 112.50
●	Indian Minerals Year Book 1971	Rs. 110.50
●	Report on the General Elections to the Legislative Assemblies in India (1970-72). Statistical information relating to the General elections to the Legislative Assemblies of Kerala (1970), Tamil Nadu, West Bengal (1971) and all States, Union Territories, which went to Poll in 1972 except Uttar Pradesh, Nagaland and Pondicherry.	Rs. 100.00 per set
	(a) Vol. II—A (Pts. I to III)	
	(b) Vol. II—B (Pts. IV tables 1-5)	
	(c) Vol. II—C (Pt. IV tables 6-9)	
	(d) Vol. IV—D (Pt. V West Bengal)	
●	Studies in Economics of Farm Management in I.A.D.P. Region of Surat and Bulsar, Gujarat, Combined Report for the years 1966-67 to 1968-69.	Rs. 86.00
●	The Air Almanac 1977 Volume I, January-June	Rs. 50.00
●	Fort William-India House Correspondence and other Contemporary papers relating thereto (Public Series Vol. VII. 1773-1776)	Rs. 28.50
●	Religious Institutions and Caste Panchayats in South India	Rs. 24.00
●	D.G.T.D. Annual Report (For the period ending July 1976)	Rs. 15.00
●	Official Directory (As on 1st Oct. 1976) (Diglot)	Rs. 12.50
●	The Climatic Water Balance of India	Rs. 10.50
●	Ethnographic Notes (Census of India, 1971 series-21) Uttar Pradesh	Rs. 9.75
●	Report on Negotiable Instruments Law	Rs. 5.50
●	Survey of Kanauri in Himachal Pradesh	Rs, 2.60
●	Question Papers for Assistant Grade Examination, 1976	Rs. 2.00
●	Rates of Direct-Taxes Assessment Year 1976-77	Rs. 1.00

Available from all authorised selling agents

For Cash Sale

KITAB MAHAL
Unit No. 21, State Emporia Building,
Baba Kharak Singh Marg, New Delhi (Phone : 343708)

GOVERNMENT OF INDIA BOOK DEPOT
8, K. S. Roy Road, Calcutta-700001, (Phone : 233813)

GOVT. OF INDIA BOOK DEPOT
Ground Floor, New C.G.O. Building, New Marine Lines, Bombay-400020

DEPARTMENT OF PUBLICATION
SALE COUNTERS IN NEW DELHI

- UDYOG BHAVAN (Phone : 372082)
- DEPARTMENT OF PUBLICATION
  CIVIL LINES, DELHI-110054.
- C.B.R. BUILDING, BAHADUR SHAH JAEAR MARG

NOTE : Postal Charges extra for mail orders below Rs. 5/- in India @ 20% of cost. Registration Charges extra if supply is desired by regd. post.

For Mail Orders, Controller of Publications, Civil Lines, Delhi 110054

davp. 76/16

Contents

Editorial

171 On Upshots of JP's Political Thoughts

173 Review

175 New Import Policy

Articles

Asok Kumar Chakravarti

177 The Causes of Women's Unemployment in India

D. M. Meacock

184 A New Strategy for India in New Era

K. Sain and S. N. Kundu

193 Trend in Wages of Farm Labourers in Some States of India

Tomotaka Ishimine

197 Capital Formation in Meiji Japan: A Case for the Bond Commutation—I

ECONOMIC AFFAIRS

Volume 22 May 1977 No. 5

On Upshots of JP's Political Thoughts

In a message to the nation Sri Jayaprakash Narayan (JP) carries the conviction that "the results of the last general elections were due to the students' and people's movement that had started from Gujarat." Political analysts will be hesitant to share his conviction. For, in depth, Indira congress was swept away due to the fast growing contradictions in Indira herself. The straightforward presentation of it is that she had enormous ambitions of an absolute dictator but not that amount of determination and aggression to inflect both men and objective circumstances for the perpetuation of domination. This induced her to return to the traditional democratic path for unconditional surrender. This also explains her advances without social ends.

JP, who was once in favour of 'partyless democracy', spiritually fathered the Janata Party, blessed the Congress for Democracy and campaigned to install both in power as a part of formulating a two-party political system in the country. This is an important aspect of his inconsistency in theory and practice. He has questioned the theoretical impossibility of extra-constitutional movement against the Government. For this purpose he thrusts the "right of recall". This right is the right of the electorates to call back their representative in the Parliament or Assembly if he/she fails in his or her duty or has become corrupt and oppressive and inefficient. The cap of it is that "a vast majority of the people concerned" are to be convinced of the grounds of recall. Apart from the point that natural justice is denied to the offender-representative, how to know that the vast majority were not made to convince by a determined few ? Still more where electorates run into thousands, how to know that the agitators for recall constitute the "vast majority" ? A "revolution" is always the making of a "determined few" ; the "vast majority" side them on trend value and out of fear of violence ; and when the "revolution" is a non-violent process, out of emotional "wave." JP seems reluctant to accept all "recalls" as "genuine." He wants "a genuine people's upsurge" which makes the matter subjective and hence abstract.

JP is also conscious that this "unwritten right" to recall is an "anarchic proposition." Rightly speaking, the proposition is not anarchic ; it is an attempt to make democracy ludicrous. Anarchy, in his use gives rise to authoritarianship as the "Gujarat upsurge" gave rise to a now Indira. Fall of authoritarianship gives rise to comprehensive democracy. He confuses the turns in political evolution.

Not contented with a party's "election manifesto" alone, JP stresses the need for acceptance of the "people's charter" by the party elected to the power. He forgets perhaps that an "election manifesto" is equivalent to the documented people's charter.

Both "Right of Recall" and People's Charter" are ideas found in "socialist democracy" of the USSR, where a Deputy is accountable to his or her electors. They are the prime who assess a Deputy's performance. The Deputies who fail to justify the voters' trust can be recalled on the basis of the law of the USSR Supreme Soviet. There the Deputies regularly report to the electorates on their work on the Soviets' activities. There is nothing novel in it. For in the USSR the 'constituencies' are the "Soviets' and the Deputies are "class representatives" in a one-party-led democracy. Currently, the Deputies to the Supreme Soviet of the USSR include 32.8 per cent factory workers and 17.9 per cent collective farmers—"the 16-million-strong Communist Party—is the principal force ensuring that the principles of socialist democratism are upheld." (*Pravda*, March 18, 1977). In Soviet elections therefore there is no "election manifesto", not to speak of competitive manifestos. What then is needed to serve the electors is the "mandate." "Every two years, the local Soviets receive up to 800,000 mandates from electorate, which express the working people's needs and demands." Thus both "right of recall" and "mandates" or "people's charter" are essence in a "socialist democracy" but not in the western democracy, which is prevalent in India

JP's idea of Lokpal is neither new nor novel, although it is unassertive. If another set of judiciary or the like is a sure cure to corruptions in high offices, Lokpal is most welcome. But social corruption is a socio-economic problem. It cannot be cured by multiplication of judiciary or so. Socio-economic problems need socio-economic solutions. Lokpal will however be available as a forum for "character assassination."

JP holds that the "ultimate objective" of the "people's movement" is "total revolution." But in a moving world there cannot be any "ultimate objective" and all "revolutions" are singularly "total revolution." Further, he did not and possibly cannot distinguish

(Continued on page 176)

New Import Policy

The Janata Government's import policy, recently announced, is loudly welcomed by the free enterprisers. For after a long spell of time they have secured a free hand to import liberally. The import of more than 100 items is allowed under open general licence, and about 30 strategic items like machinery, machine tools, drugs, synthetic fibres and edible oils are also included in the same category. Procedures of imports are simplified in tune with the general liberalization, and import entitlement is no longer a large constraint or premium for export. The established importers will now have higher quotas in respect of many items.

One view of this swift and substantial shift in import policy is that it is a psychological challenge against the previous Indira Government to prove that whatever economic policy it had adopted was injurious to the interest of the janata (i.e. people). This may be partially true as the Janata Government as a matter of political policy is likely to disprove everything, good or bad, taken to be proved by the previous Government and also by the then thinking of the people. But the other view is that it is an ideological reflection of the policy of expanding free economy and strengthening the monopoly capital based on a large scale destruction of the viability of the indigenous industry in the name of Gandhian philosophy that the possession of the nation's wealth and income by a few is equivalent to social trusteeship ; for whatever may be the outward appearance of possessions the 'heart' of the possessors is changed. Those who live before time and space may believe in it but those who are rational and have respectability for reality will understand the exploitation content of this social philosophy.

For an advanced developing economy which is encountered with constant threat of inflation, import is a very delicate element. For every import involves how to pay for it, and when paid, fritters away the national income, and poses a danger to indigenous industry. The import is well compensated if there is exportable surplus to pay for it without recourse to inflationary finance, and if it is planned to serve the economic potentiality of the country with social justice. But when it is done to feed the requirement of the monopoly capital it invariably drags the economy to fall in line with the international division of labour and production developing both economic and social problems.

In the context of India, the country has built up a comfortable foreign exchange reserve during some past years at the expense of the living of the commonmen and in order to hold up the rate of increase in inflation as associated with expenditure on imports and investment induced by imports. The present Government has the advantage and the allurement of the huge possession of about Rs 3000 crores in foreign exchange reserve. It may now think of its proper utilization for the growth with social justice. That is all welcome. But the point is has the economy reached such a stage of development that it can sustain the heavy and unplanned investment expenditure that free economy implies ? In other words, is it not that the economy is under a great suppressed pressure of inflation indicating that an additional expenditure, however financed, will be tremendously inflationary unless the economy is put to emergency, which is opposite to the Janata Government's free economy thrust ? Free economy is fully backed by soft wage and income policy, and right to stoppage of work and lock-outs, i.e. where all crucial economic decisions will be a matter of political decision. There is also the apprehension of further accumulation of excess capacity both in plant and input levels and the consequent imbalance and waste in the economy. The country's economy needs more than the bare constant review for growth expenditure ; demands regimentation devoid of political decisions, and direction from above once the plans and decisions have been made in a democratically centralised process. Today's fear is that the liberal import policy vis-a-vis the liberal economy may absorb the precious foreign exchange reserves more for feeding the greed and whims of monopoly capital than for growth, least with social justice, driving the country to depend more on foreign aid than on trade.

Review

Consolidating National Gains, Speeches of Shrimati Indira Gandhi, D.A.V.P., Delhi.

Mrs. Indira Gandhi was the youngest and most controversial Prime Minister in India. Her regime was full of exciting and challenging events which created the base for a great social dynamism in the country. It is she who removed the 'Syndicate' from the Congress politics, split the organization, eliminated all political opponents and in a very short period of time became all-in-all not only of the Congress but also of this great country. It was she who had the courage to openly defy and criticize the questionable role of the western capitalist countries in the developing economies, drive the country to the fold of the USSR bloc, and had challenged by practice the 'non-proliferation' pressure of the super-boss clique and successfully liberated the East Pakistan showing the excellent strength of Indian army and people. Then it was she who was swept away by the Janata wave, and was the ultimate factor responsible for the total degeneration of the Congress and a large scale defection from it.

Mrs. Gandhi's thoughts decidedly have a great relevance in the political history of India and now that she is no longer in power her speeches can be read with more thoroughness and constructions. The present publication contains her speeches delivered during October 1975 to May 1976, the most crucial period of her and the country's life, for that was largely the period of Emergency.

Mrs. Gandhi entered this phase for she rightly apprehended that

> "The inability to accede to power by democratic means may lead some parties to offer unconstitutional or extra-constitutional challenges."

So came the Emergency. It was nonetheless painful to her

> "Now, when a child suffers, the mother suffers too. Thus we were not very pleased to take this step."

She staked for this her position as a Prime Minister :

> "I thought if I am to go, I shall go."

Addressing the Press he remarked :

> "We did not hear their voices when there was the threat of

> *Satyagraha* on the floor of the House or when a Member of this Honourable House wanted to go and occupy the chair of the Chairman."

She had the wit to embarrass the Oppositions :

> "Emergency had to be declared because of acts of sabotage, because there was a very deliberate effort to paralyse the Central Government. These words are not my words. They have been used by the leaders of this movement."

Her complex for intelligentsia is expressed frequently. At one place :

> "I am not educated in that sense that my Honourable and learned professor here is. And I do not think that quite frankly I have missed anything."

On bonus issue :

> "In principle, I personally feel it is unjustifiable to expect bonus when economy is losing."

She raised the most important point that every person and group and community think in terms of grabbing as much for itself as possible. But where is the solution if there is no equation between demand and supply ?

Ideologically she cherished :

> "to evolve our own pattern of living and not to imitate other countries. At the higher level, we should like to give our people the benefits of science without the loss of their spiritual moorings."

Indira's phase has eclipsed but some of her thoughts have raised a great question mark.

(Continued from page 172)

between the "people's movement" and the "anti-people's movement" ; for the description of a movement is a matter of political convenience. Nor did he spell out his concept of "total revolution" save that it aims to preserve both old and new values. He however cherishes, following the Communist China's experiment, the idea of closing down of all schools and colleges for forcing out all students to villages and slums to make every citizen a literate ignoring that in China "politics takes command" in every bit of act.

Economy is at the root of all "total revolution." JP has virtually overlooked this factor. His only rue is that "so little was actually done" "about the usual socio-economic reforms", as if the country's economy does not need any structural and attitudinal changes.

JP is a great patriot. But as a social philosopher he is a reformist ; as a political philosopher an upholder of the supremacy of an organized group of negative agitators ; and as a socio-political activist a "revolutionary" who seeks old solutions to new problems.

The Causes of Women's Unemployment in India

Asok Kumar Chakrabarti*

Women's unemployment in India is a multifaced problem. Tremendous rush of female job-seekers within more or less an inflexible employment contour, the failure of our defective developmental process to unleash the locked up employment potential within the economy, inability of our women-folk to adapt themselves to quick economic transformation, low level of educational attainment, the frightening increase in female population, highly prejudiced social attitude resulting in partial unwillingness of the employers to employ women, widespread sex-discrimination practised in different productive sectors, the concentration of women's preference for certain selected occupations, unwillingness on the part of our educated women to go to villages due to incongenial atmosphere prevailing there, unhelpful attitude of the employers towards the handicapped women and lack of provision of adequate opportunities for their self-employment ventures are the prominent causes of women's colossal unemployment problem in India today.

Official figures throw much light upon women's employment situation obtaining in the country. It is already very grave and continues to worsen year by year. The Report of the Committee on the Status of Women, put up before Parliament in February 1975 awakens our attention to the fact that the percentage of female working population to the total working population in India fell from 34.44 in 1911 to 17.25 in 1971. In 1911, 33.75% of the entire female population had employment but in 1971, the figure sank to 11.86%. Now women constitute 56% of the total unemployed in India.

There has been an astounding increase in female job-seekers in recent years. Over 19 million women entered the labour force during 1951-61. According to information obtained from the National Employment Service authorities in Calcutta, women's names enrolled in the employment exchanges increased by 66% in 1971 over 1970. According to a recent, survey, the number of women willing to accept jobs in married life jumped by 30% during 1963-73. There are 89,700 educated female job-seekers in West Bengal (next to the first place holder Kerala where the number is 1,10,700). On 13 August 1975, the Labour Bureau of the Union Ministry of Labour, brought out "Women in Industry" in which it was revealed that at the end of 1974 about 12% of Indian job-seekers were women. There are many factors bringing on this. A quinquennial period back, a combined survey directed by the Tata School of Social Sciences of Bombay and the Delhi School of Economics proved that most urban women seek jobs due to economic unavoidableness. A recent sample survey shows that mere financial crisis compels 45% of our job-seeking women to sacrifice ease and content at home and join labour force. Modern society's permissiveness has undoubtedly favoured them. According to a recent survey, lady typists and receptionists of Bombay admit that they can serve now because the social environment helps them. Modern women's desire to please their "selves" by achieving economic independence works as a prominent motive force. A recent sample survey has revealed that 25% of women job-seekers are prevailed on by a sense of self-confidence. Individual personality is strengthened by achieving success in the employment field. Manu's dictum "Women don't deserve independence" (vide Manu V 147, 148) has been done away with by modern women. The gradual extinction of the joint family system has compelled many widows to run in quest of jobs for achieving financial security. Sometimes, husbands' unfair treatment (cruelty, miserliness, etc.) forces many wives to look for emplopment. Many divorced women come to grief and become job-hunters. Some women went to improve their individual status in the family by coming by suitable employment. According to ESCAP statisticians, housewives' share in household decision making in India is only 2.9%. At times, pure personal complex and evil behaviour of the kinsmen animate women to hunt jobs. Employment is wanted also as an occupational therapy to stranded and exploited women. Many unmarried girls want jobs simply to contribute towards their dowry. Now-a-days, matrimonial columns in newspapers abound with notices wanting working brides and consequently grown up girls are lured to look for jobs. Moreover, late marriage requires waiting for a considerable period of time, the passing of which becomes a problem to many girls who prefer taking jobs to sitting idle during this time-gap. The success of family planning techniques in limiting child birth and the spacing of children has enabled many women to have recourse to employment. In the western society of today, women's employment has been a usual phenomenon and many Indian women want to make after the western model. Sometimes, mere desire to keep off the wastage of their costly academic resources persuades women to look for a job.

---

* Head of the Deptt. of Economics, Shibpur D. B. College, Howrah, W. B.

But the country's employment potential for the time being is tremendously low and not expanding adequately. We have accepted the USSR development model which consists of emphasis on heavy industry. Our developmental process "is permeated by the idea of the special importance of the urgent development of heavy industries..." (P.T.Bauer : Indian Economic Policy and Development, P. 109). Laying of undue emphasis upon capital-intensive heavy industry has brought in economic maladjustent and effected isolation of most of the women from the industrial field because of their lack of knowledge of the modus operandi of the sophisticated bulky machinery used in such industrial plants due to want of proper training in turning on them.

Other industrial establishments are increasingly bringing in modern techniques. Factories have a general tendency of increasing sophistication which requires greater technical knowledge and skill which most of our women are deprived of. They are not experts and have failed to keep up with the times. Consequently their employment in factories fell from 10.37% in 1963 to 8.73% in 1972. The government publication, "Women in Industry", reports that about two-thirds of our women job-seekers are totally devoid of any training or work experience. Modern industrial enterprises are using more and more capital-intensive techniques which hardly suit local conditions. Women's unemployment problem is aggravated thereby. Machines have now invaded even farms which employ 80% of our working women. Mechanisation has been accepted as an essential creed of scientific farming which calls for more skills. As women do not go in for agricultural science and agricultural engineering they have been less adaptative to this change and their unemployment has inevitably ensued. The Report of the Committee on the Status of Women states that the number of women cultivators fell from 18.36 million in 1951 to only 9.26 million in 1971. Thus women have become the greatest victim of modern economic transformation. They now constitute, a la the Report, 60% of the rural unemployed. Altogether, 4.5 million women remain jobless in rural areas. Women from workers are acutely underemployed as they have only 149 working days in a year, a la the Report.

Women's employability has generally been impaired by their lack of formal school education and on-job training. According to a recent survey conducted by SEWA (i.e., Self-Employed Women's Association) in Ahmedabad (where primary education is obligatory) 90% of the female children of women junksmiths and carpenters keep themselves away from schools. Eight out of every ten women are still illiterate in India, a la the Report of the Committee on the Status of women. Compulsory universal education has not yet been enforced in India. According to the findings of the U.N. Committee for Development Planning, women here still remain as "the greatest untapped reservoir of potential skills...". (Vide The Stateman, Calcutta, 26 Aug.'75). They are denied facilities for attaining technological skill through on-job training as employers refuse to take women apprentices. Whatever education they get cannot be properly co-ordinated with the available employment opportunities.

The frightening increase in the female population has accentuated their unemployment problem. There were only 118 million female persons in India in 1901. Their number rose to 213 millions in 1961. It is expected that 305 million female persons will exist in India in 1976. This astounding increase in numbers has opend a new dimension to women's unemployment problem. Increase in their employment opportunities has fallen short of that in their numbers.

Consequent on the prejudiced and backward social outlook a staunch unwillingness has developed in the minds of many employers to appoint women. "Women are still in fighting stage in their fields of works", said Dr. P. Guha in her address to a seminar on "Women for the World of Work" (Vide The Amrita Bazar Patrika, Calcutta 17, November 1975). Thanks to the dicta of Manu and others, most of our people believe that women's place is at home. "It is not the building that makes that home, it is the wife that makes it" is the common belief in society. Manu has commented to the effect that women are by nature corruptors of men. (Vide Manu II, 213). Perhaps our factory owners being influenced by Manu dislike employing women (pari passu with men). But in Japan, another Asian country, just the opposite thing happens. Office-wives or women secretaries (who arrange papers and presentations, attend phones, prepare beverages and perform other works such as bringing aspirin tablets) are appointed there for increasing labour productivity in factories. Everyone of the

371 men working in the Tokyo sales headquarters of a foremost Japanese automaking firm, for example, has at least one "office-wife", (vide The Amrita Bazar Patrika, Calcutta, 1 July 1975.) But in India, women are despised as "corruptors of men" and debarred from employment. Undue emphasis is laid upon their "biological defects" (e. g., emotionalism, illogicality and physical weakness). Prof. M.J. Karvoner, Director of the Finnish Institute of Occupational Health, refutes this proposition (in the magazine "World Health" about five years back). He comments that though men may be slightly superior to women in regard to physical prowess, there is no noticeable difference between them in regard to mental capabilities (and where they appear, they are the result of training of mental and moral powers rather than natural). Rev. T. A. Mathias. a renowned Indian educationist, opines however that biological and psychological differences do exist between men and women ; but those differences do not necessarily amount to women's inferiorty to men. (Vide The Amrita Bazar Patrika, 8 December 1975). But in India old, fossilized ideas are still holding up women's employment. Perhaps, Prof. Benjamin Higgings has rightly remarked that India should rather be called a "Static economy in progress" than be called a "developing economy". (B. Higgins : Economic Development, 3rd Indian Reprint, p. 50).

Sex-discrimination is widely practised in India. The constitutional pledge of equal rights and opportunities of women is ignored wholly. In certain specific industries, women's employment is disallowed in toto. In certain others, married women are debarred. If any air hostess, for example, responds to wedding bells she has to break with her job immediately. In the first six months of 1975, more than forty air hostesses had to lay down their jobs on this ground only. (Vide The Amrita Bazar Patrika, Calcutta, 23 June 1975). Again, married women are not permitted to sit for the All India Services Examinations. A women who has already been recruited in I.A.S. (or I.P.S. or I.F.S.) may be turned off from services on the simple plea of being married afterwards. In tea-gardens, the offices are run exclusively by men, and women are not allowed to take even clerical posts. (Vide the Amrita Bazar Patrika, Calcutta, 26 November 1975). Female labourers are prohibited to be employed in underground structures or below ground in mines. In mining industry as a whole also women's employment appears to be discouraged. The Committee on the Status of Women reports that in mining female employment fell from one lakh in 1971 to ninetyfive thousand in 1971, while the total employment increased from 549.000 to 639,000. Perhaps managers' production headache caused by women labourers' possible pregnancy and the consequent maternity leave acts as a dissuasive factor. Hongkong factory owners find women "more reliable and less inclined to job-hop or shirk" and prefer to appoint them. (Vide Dennis Bloodworth's article "Assian Women Less Equal Than Most", published in The Observer, London.) But according to the government's publication "Women •in Industry", women employed in factories in India have fallen off from 10.37% in 1963 to 8.73% in 1972. Women employers themselves seem to dislike appointing women. A United Nations panel feels that a woman does not usually even vote for another woman if she can cast her ballot for a man. (Vide The Amrita Bazar Patrika, Calcutta, 28 July 1975). Women are not employed as mariners in Indian ships. But another Asian country, Singapore, has already come on to it because sea-girls are less troublesome. The bus services there take only women for their greater politeness. (Dennis Bloodworth, op. cit.) We cannot think of such a situion in India. The Government here does not also allow women to join military services. The British Government's reported decision in 1973 to recruit about 700 women for the Ulster' Defence Regiment was dramatic in this context).

The concentration of women's perference for a very limited number of occupations has accentuated imbalance in the employment situation by giving rise to steadily increasing demand for certain specific jobs in contrast to the slowly increasing number of situations vacant. Two reports of pilot studies conducted in Delhi and Bombay in 1970 indicate women's clear performance for teaching and ministerial jobs. (Vide S.N.Rande and P.Ramchandran : Women and Employment, Tata Institute of Social Sciences, Chembur, Bombay.) The reports state that teaching as profession is all the rage amongst women. (It is of course almost a world wide phenomenon. In the Soviet Union, for example, women constitute 71% of the nation's teachers. In Federal Republic of Germany, 47% of the teachers of all types of schools are women). Perhaps lightness of the job and prestige or social status associated with it attract most of the educated women towards this profession. Secretarial work and nursing are also looked on as women's profession. But legal profession on the contrary is looked on as a musculine one. Female lawyers have to keep direct contact with male clients and this direct contact is seldom put up with by their guardians. Similarly, in our conservative society, police-women's job is disliked by elderly women who rarely accept them as their own daughters-in-law.

Unemployed medical women remain unemployed mainly because they prefer remaining unemployed to accepting jobs in rural areas lacking in urban amenities. Rural health centres are running with inadequate staff. Mainly well off girls take up medical studies. They after coming by medical degrees, search jobs in urban areas mainly for avoiding wastage of their hard-earned academic resources. They become unwilling to undergo the hardship of rural life and remain un-employed if the urban areas fall through to provide them suitable employment.

Our physically handicapped women have fallen in a tight corner by being compelled to compete inter se and also with normal healthy people in the prevailing grim unemployment situation. Most of our handicapped women lack in any definite qualification. (Only 2% of our blind children, for example, receive exact school education). They get little opportunity for coming by jobs. Whatever little training is imparted to them grows outmoded rapidly. Training in weaving, furniture-caning etc., for example, is not of much practical worth to-day because of the introduction of many sophisticated varieties of those goods in the market. Employers seem to be somewhat unduly prejudiced against employing handicapped women even where they can be useful. The government's niggardly attitude in extending 'self employment' facilities is also objectionable. Without necessary finance and other aids (like providing market) these unfortunate handicapped women fall through to come on to their own enterprises.

In view of the impossibility of providing sufficient 'wage employment' for the very large number of unemployed women it is urgently necessary to extend adequate self-employment facilities to them. But this has not been done. It is a dark side of the performance of our banking system that it was possible for scarcely 8% of the self-employed indigent women surveyed by SEWA in Ahmedabed to have necessary loans from banks for flourshing their small enterprises. It has of late been admited by the Ministry of Industrial Development that women have not been sponsored by the Small Industrial Development Corporations for training in better techniques of production. It is worth noting that the Report of the Committee on the Status of Women has pointed out that the number of women employed in trade and commerce fell off from 815,000 in 1961 to only 556,000 in 1971. In household industries, that fall was from 4,665,000 to 1,331,000 only. There is a very significant question on stimulating demand for their products. The engine of development is market and too little attention is paid to it. In agricultural operations also women enjoy scanty self-employment facilities. "Self-cultivation, custom service and marketing of inputs like seeds and fertilisers" are possible avenues of self-employment in agriculture and our farm women are gradually retrograding along those paths due to lack of technical qualification, proper guidance and necessary leadership.

A New Strategy for India in New Era

D. M. Meacock*

1. Policy

The month of March, 1977, witnessed the end of an era in Indian politics. As the voting results came in, it became clear that the electorates had brought to a close 21 months of emergency rule, eleven years of Mrs. Gandhi, and thirty years of Congress Party supremacy—the end of an era indeed. There will undoubtedly be jubilation in many quarters at this event ; but such jubiliation should be guarded. As the old era fades and new era dawns, the people expect to see new policies, a new spirit, a better way of life. If the new leaders havê nothing better to offer than the old, then disillusionment and discontent will rapidly develop. A new era has dawned in Indian politics ; a new era demands a new strategy.

A strategy is a plan of action. A plan of action must itself be motivated and guided by principle—in the case of politics, an overall policy. The world today has a choice of two political policies. On the "Right", we have the traditional Free Enterprise ; on the "Left" we have Socialism/Communism. Looking at the applications and the results of these two ideologies in various countries, it seems apparent that neither works perfectly in its pure form ; and neither would seem to be ideally suited to the needs, temperament and traditions of India.

The Right is for *less* government control, more freedom. But this can allow freedom for one individual to exploit or otherwise intrude upon the freedom of another or others. Many traditional Right-wing free enterprise countries in recent years have been adding aspects of socialism in an attempt to give their political-economic system more of a "human face". The Left is for *more* government control, less freedom. But if the government goes too far, it does more than simply protect its citizens from exploitation : it initiates its own intrusive restrictions over its people's freedoms through excessive interference in personal lives, commerce and industry, which in turn can result in repression and industrial inefficiency. Many socialist/communist countries are now beginning to introduce more personal freedom and economic free enterprise into their societies.

---

* Wales/GB

The traditional Right is for *less* control, the Left is for *more* control. From this it may be deduced that the key component in the world's two political philosophies is the common factor of *government control over governed,* and that the two philosophies differ only in degree.

Let us therefore propose a simple straight line scale of *government control over governed,* delineated for convenience from 0 to 100%. We can now examine the different degrees of control and their implications.

We can summarize the degrees of control as follows :

Low Control—Right—government *allows* intrusion between individuals
50% Control—Centre—government *prevents* intrusion between individuals
HIGH Control—Left—government *creates* its own intrusion of freedom.

2. Personal Liberties

The Centre Policy requires full protection for individual liberty of person and property from intrusion/restriction by others. Regrettably, however, the main intruder into personal liberties today is government. The Center Policy does not permit government intrusion into personal liberty : "if the government issues any law or instruction which is not wholly and directly in protection of someone's freedom, then the government is creating a prime intrusion of freedom." With regard to the individual's person, government powers would be strictly circumscribed, especially in relation to suspected or convicted lawbreakers. With regard to the individual's personal property, government would no longer be able to help itself to earned incomes as of right.

This rules out socialist policies of free and/or subsidized welfare services and the huge undisciplined public sector growth to which this gives rise. Redistribution of incomes involves theft from the wealthy to subsidize the poor. Socialists may claim that the incomes of the rich are unfairly earned ; if that is the case then the correct remedy is to establish a system of fair rewards. Where poverty results from exploitation and inefficient political/economic management, the correct remedy is to remove exploitation and to improve the efficiency of political/economic management. Welfarism does not remove poverty, it only attempts, usually unsuccessfully, to conceal it, but it does remove—most effectively—the self-respect of the poor recipient, as well as his incentive to improve his lot. In addition, extensive government welfare services tend to be monopolies, thus removing the consumer's choice and the discipline which free choice imposes on the service. Finally, government must theoretically act as arbiter to ensure fair and effective operation of commercial sector services; but when government is actively involved in the commercial sector, possibly even as the largest participant, how can it then judge and direct the commercial sector with impartiality ?

Housing and urban environment, education, healthcare—these services must be based on self-support, with techniques and technologies appropriate to self-reliance. The role of government is to direct and coordinate within the Centre Policy framework and strategy ; and it is from "outside" through its economic strategy, that it must impose upon "free enterpsise" the disciplines of fair wages and prices, social control over investment, etc. Government itself must remain solely and exclusively a service of political administration, with the right to charge its customers only for political services rendered.

Thus the Centre Policy applied in the area of personal liberties provides a positive base of individual freedom. By rejecting the socialist path of State welfare "correctives", it places even greater stress on the need for a positive stategy to fight inequitable distribution of natural resoursces, economic exploitation, unfair incomes and prices, general maladministration—and the stagnation and poverty which result.

3. Natural Resources

Resources in their natural state are not the products of human labour, and are therefore not immediately attributable to and associated with any individual person. The natural resources are "natural". But people need to use the resources, thus continuing demands on this "neutral territory" must somehow be apportioned, monitored, and disciplined.

The Centre Policy must ensure freedom up to but not beyond the point where freedom intrudes upon the freedom of another. In relation to the use of the resources, the Centre Policy must recognize the freedom and right of every individual to use the natural resources equally with others. But the Centre Policy cannot allow any person to intrude upon the freedom of others by claiming for his own exclusive use a share of the resources which is unfair or disproportional as compared with the demands and requirments of others. In effect therefore, the Center Policy administration must advise users of the resources as to whether or not the proposed use represents a fair and equitable use relative to the needs and demands of others.

In order to be in a position to give such advice, the political administration under the Centre Policy must first prepare an overall national identification of all resources available—mineral deposits, agricultural land, land suitable for habitation and cities, strategic land suitable for airports, harbours, etc., areas of outstanding natural beauty, and so on. Second, it must prepare an assesement, based on a thorough and fundamental analysis, of demands upon the resources both current and anticipated. Third availability and demand must be correlated to produce an overall National Resources Plan. On this basis, clear guidelines and definitions of fair and equitable uses can be established. This assessment process must necessarily be the more precise and detailed as population densities and their pressures increase.

It should be noted that resources-use planning under the Centre Policy differs essentially and fundamentally from the High-control concept of planning, in which all resources are vested in the State and planning is thus autocratic, undiscipiined and arbitrary. The Centre Policy is based on individual freedom, only to prevent it from intruding upon another freedom. Thus *free individual use of the resources is restricted only to prevent unequal or disproportionate use which would intrude upon the freedom of others.* The National Resources Plan is at all times disciplined by this policy definition ; it can be questioned and, if need be, corrected at any time.

With properly informed and efficient planning of resources-use, open at all times to criticism and correction, all use can be properly provided for—cities, transport, agriculture, industry, leisure, etc.

The Centre Policy impose on its planning processes the necessity to assess most thoroughly the availability of all natural resources, and to go deeply and fundamentally into the basic analysis of present and anticipated resources-demands. Many leading and basic questions regarding human demands on the resources have never been asked in the official planning processes of either free enterprise or socialism/communism. A leading example concerns the all-important and fundamental issue of habitation planning.

People tend to live together in groups, varying in size from village to city. The basic reason for this is that group collectively provides services and offers opportunities which the individual on his own could not provide. The concept of a community is thus defined by its function—a coming together to provide and enjoy facilities generated by the group. The village or small town provides highly specialized service. Thus the individual is dependent on the town, and the town to a lesser degree is dependent on the city. Taken together this web of dependence is a self-contained community.

What is of size ? There are in fact upper and lower limits of effectiveness. India abounds in villages which are too small to allow basic services to be viable, too small to provide job opportunities and economic development. At the other extreme, many cities are too large to be manageable. In general, a total community (central city and dependent towns) of a million persons can prove viable both economically and physically. The minimum size of dependent towns should be about 5,000 people.

The definition of a community and its purpose establishes the transport pattern. The dependence of outlying towns on the centre establishes a *radial* pattern ; the independent self-supportiong character of the whole community dictates that it be linked to others on a *grid* basis for equality of access between community centers. In this way rural de-population and corresponding problems of overcrowded cities can be halted through the provision of local jobs and services, with the specialist services and "bright lights" of the city-centre not far away.

The establishment of a basic habitation plan is vital for a coherent national and adiministrative pattern, for effective use of land, for the development of efficient communication and transportation, and most importantly, to ensure that the community satisfies the social, cultural, and economic needs of its inhabitants.

If the overall city-district can be a self-contained economic unit, the smallest component part, the town of 5,000, can be near self-sufficient too. Gandhi's vision of the self-sufficient Indian village was economically sound in general principle, though the size of the village needs adjustment in the light of the present and future social and economic needs of the people. A large village, or small town, of 5,000 inhabitants, can provide the jobs and services which a village of 500 cannot. More importantly in a predominantly agrarian economy, the 5,000 town can support an agricultural community production unit of viable size.

This brings us to the question: how can agriculture best be organized ?

The Centre Policy establishes the basic "neutrality" of all *natural resources*—that is to say, resources in their natural state without the addition of any human labour.

Human needs and demands upon the natural resources are apportioned on the basis of equalty of access to the natural resource. It should be noted here that the value of human labour already *added* to the natural resources as investment in land impovements, etc., must of course be separated out from the resources 'value', and as such belongs financially to the person who put it in. However, as will be seen below, the Centre Policy rejects the concept of unearned incomes, as for example incomes deriving solely from a title to land without any work being performed. Thus the Centre Policy clearly rejects the concept of feudalism, or similar arrangements such as share-cropping etc.

On the other hand, the handing-out of small parcels of land to individual farmers is not a viable alternative. The Centre Policy does indeed guarantee equality of access to the use of the natural resources, but this is figurative rather than actual, for there are other factors to be considered such as efficiency of use, and efficiency of commercial services such as agricultural production.

A title to a parcel of land may give the individual owner self-respect and self-confidence, but these are hollow benefits which will quickly prove to be but an illusion. A farmer with a small plot can never mechanize, develop new crop-strains, ensure efficient management, accounting and marketing. The final objective of economic activity, and this includes agriculture, must be to provide one's consumption needs with ever-increasing efficiency. The small farm can never satisfy the needs of the farmer himself, his customers, or the nation.*

Equality of access to the natural resources, the need for efficient use of resources, and the need for efficiency in economic services combine to give us one workable answer : the agricultural production unit. Our basic village/town of 5,000 can suport an agricultural production unit which is like a factory : everyone involved—cultivators, machinery operators, research workers, accountants, marketers—must contribute his skill as required and in exchange for a fair reward. Only in this way can the agricultural unit obtain capital, manage it properly, mechanize viably, undertake capital works of irrigation, terracing, soil improvement, etc. Only in this way can the nation be assured of efficient and reliable agriculture-yielding continued supplies of high quality produce.

---

* These problems have been developed in several articles in "Economic Affairs" during 1976.

These agricultural production units will be large enough to ensure their own standard of management, mechanization, and marketing. In addition, they can maintain contact with one another through a central national agricultural research and managment standards unit which keeps them supplied with the latest techniques and information.

The agricultural "commune" is often confused with communism; but its basic purpose is not political, it is economic. Agriculture is an industry which needs a minimum size for economic viability. The concept of area agricultural-cooperatives for mechanization and marketing was developed in Britain after 1945 and is now a widespread and vital factor in farming efficiency.

Thus the broad strategy in relation to natural resources use is as follows. The natural resources are "neutral territory" to be used by people as needed on the basis of equality of access and participation. The guidance is supplied by government in the form of a National. Resources Plan which correlates availability with demands. In particular, an overall habitation plan defines and locates the "city-districts" with appropriate transporation plans as guidance for all new development. The smallest unit is the village/town of 5,000 inhabitants which can provide basic jobs and services. Agriculture must be based on an agricultural production unit of minimum specified size in order to attain maximum efficiency of use, of yields, and of costs.

4. The Economy

The Centre Policy requires that basic free enterprise be regulated sufficiently to ensure *fair exchange* between participants. The neccessary government regulation falls into three areas: (1) Wages and prices; (2) Standards; (3) Economic coordination.

(1) Wages and prices in the free market economies of the world today are established by dispute. The wage is, quite simply, as much as the employee can get, and/or as little as the employer can give. Prices are as much as the producer or dealer can get, or as little as the customer can give. The problems of this dispute system are numerous.

In the first place, unregulated dispute in which one party can take advantage of, and exploit the other is contrary to the essence of the Centre Policy. Second, serious economic distortions can arise; for example, the widespread wage disadvantage suffered by poorly-organized agricultural workers the world over is responsible to a major extent for the population drift from countryside to city, to the detriment of both. Third, the basic dispute-system instability creates inflationary tendencies in both wages and prices, which are universally "treated" in free enterprise economies by government-induced depression of the economy below its capacity to the obvious deteriment of the whole economy. The absence of any sort of coherent basis for evaluating wages and prices also implies that the national monetary unit has no definition whatsoever.

Under the Centre Policy a system of labour-evaluation (as already practised very sucessfully in several large British companies, for example), would be established as an overall national guidance for wages, to be applied first to major industries and services, and to be extended along with industrial and agricultural development. From wage evaluation, price evaluation follow on the same basis, so that both wages and prices reflect, and are defined by work-content. The implication of this system is that wages and prices are based on work-done, fairly evaluated at all levels. And the monetary unit now has scientific value in terms of the basic labour unit. With fair exchange comes the removal of inequitable differences between similar jobs and the distortions which would otherwise result (i.e. between agriculture and industry). Inequities of unearned incomes are also removed, i.e. land rents and commodity profiteering. In other words, we have the basis of a fair and scientific monetary and evaluation system.

(2) The second factor in assuring fair exchange is the assurance that goods and services must represent maximum efficiency in design, production and management. To this end, a National Standards Institute must be established, the job of which is to receive and test designs and techniques, and then to publish Standards reflecting maximum efficiency. This applies to every aspect of design, to production techniques, and to personnel management, general administration and accounting. The spread of Standards would have a far-reaching effect on industry, agriculture and service. In developing economies, it is not always viable to provide a wide consumer choice, but with Standards it can always be ensured that even when only one product is available in a particular field, that product will represent the very best in design. As well as ensuring a high standard of product or service, Standards will also ensure maximum productivity, i.e, lowest possible price. Another example of beneficial effect would be the benefits of standardized accounting systems.

(3) The third factor, overall Economic Coordination and Planning, ensures minimization of waste and bottlenecks, especially at sensitive points, and ensures maximum use of overall human, industrial and financial resources. The establishment of national economic priorities is especially significant in providing overall direction, and "social control" over investment, ensuring that this vital resource is used to the maximum benefit. In particular, Standards and National Planning can combine to ensure encouragement of schemes and projects based on self-reliance and employing appropriate technology. In addition, it must be a primary article of National Planning and direction of investment that overall national productivity (i.e. full employment) must take the lead over individual industrial productivity (i.e. investment in labour-saving machinery). First get the people to work, *then* get them working efficiently.

Thus we see the economic strategy as follows.

Wage and price evaluation based on work-done ensures *fair* wages and prices and removes damaging anomalies, as for example, between agricultural and industrial wages ; it also removes the exploitation of unearned incomes—loan-interest, land rents, profiteering. The establishment of Standards and Economic Coordination ensures maximum efficiency both in individual industries and services, and in the overall national economy. This economic strategy highlights the difference between free enterprise, socialism/communism, and the Centre Policy. The Centre Policy avoids the extremes of unequalified free enterprise, or the complete takeover advocated by socialism/communism. The Centre Policy takes free enterprise as the base, and then imposes sufficient control to ensure no exploitation through unfair wages and prices, maximum efficiency of products and services, and maximum overall efficiency of the economy and social responsibility in the direction of investment resources. In other words, Centre Policy can be said to ensure an economic climate of *socially responsible free enterprise.*

It may also be noted that strict work-evalution as previously described would not permit "interest" on savings since this represents an unearned income. However, there is an important and highly significant compensation. If prices are defined in terms of work-content it follows that as productivity increases, i.e. as the work-content in a produce falls, the price falls. in other words, under the work-evaluation system, a 5% annual rise in productivity equates with a 5%

(Continued on page 208)

Trend in Wages of Farm Labourers in Some States in India

K. Sain and S. N. Kundu*

I

The following paragraphs contain an endeavour to study the movement of agricultural wages which is expected to reflect, *inter alia,* the benefits, if any, accruing to the farm workers from the plans of agricultural development including the schemes for introducing high yielding varieties of crops and ushering in green revolution launched, especially during the sixtis of this century by analysing the wages data for three Indian States, in particular,—Punjab recording highest farm productivity and leading in the sphere of green revolution within the traditional socio-political set-up. Kerala for quite sometime past having a leftist Government specially interested in the organisation of the workers including farm labourers, and West Bengal so far lagging behind all-India average in respect of farm productivity.

For West Bengal data relating to money wages for agricultural labourers as recorded in Farm Management Study Series* for the years 1963-64 to 1967-68 for treated and non-treated villages in the five selected districts of Nadia, 24-Parganas, Hooghly, Burdwan and Birbhum of the State have been analysed. It was found that in the year 1967-68, for which the latest farm management report is available, a substantial proportion of the sample farmers raised high yielding varieties of crops. Total average weighted wages (in Rs. per day of 8 hours each) paid by such farmers to agricultural labourers for all the five years: 1963-64 to 1967-68 have been estimated for the principal crops grown by them—Aman Paddy, Aus Paddy, Jute and Wheat and the variations over years and also inter and intra crop variations in wages have been noted, the numbers of farmers growing different crops taken as the corresponding weights. Data on agricultural West Bengal published elsewhere have also been analysed for inter comparison and for noting their behaviour vis-a-vis behaviour of consumer's prices.

---

* Dept. of Agricultural Economics, Bidhan Chandra Krishi Viswa Vidyalaya, West Bengal.

II

Altogether 38 farmers growing local and high yielding varieties of crop and belonging to 7 villages in the districts of 24-Pargañas, Hooghly and Burdwan have been covered for estimaning the average total daily weighted rates of farm wages during 1963-64 to 1967-68. This selection was done with a view to finding out, among other things, the impact of introduction of high-yielding varieties (H.Y.V.) upon agricultural wages, particularly, in areas of relatively high concentration of such varieties. Of the 7 villages covered, 2 are treated as ones where sample farmers received 'advice and investment' from Government for all the five years under investigation except the year 1967-68, treatment being nil during the last year.

Average total weighted daily agricultural wages for all crops of both local and H.Y.V. taken together varied from Rs. 1.88 to Rs. 3.73 during 1963-64 to 1967-68, maximum annul variation being recorded during 1967 68. During the same period Consumer Price Index Number for agricultural labourers for the State as a whole shot up from 103.00 to 241.00. As a result, real wages per day for farm workers declined from Rs. 1.79 in 1963-64 to Rs. 1.35 in 1966-67. Although real wages increased somewhat during 1967-68 to Rs. 1.54 per day, possibly because of introduction of H.V.Y. crops, yet it remained much below the level of daily real wages for the year 1963-64. This indicates that the conditions of farm workers actually deteriorated during this quinquennium.

As between the treated and non-treated villages wage rates were found to be higher in the large majority of the cases in the treated villages, signifying that investment, extension services and greater care for the farmers might improve farm wages and the standard of living of farm workers via relatively higher demand for labourers, higher productivity, etc.

As between different crops wage rates per day were found to be at maximum at Rs. 4.27 for H.Y.V. aman paddy cultivation, taking both treated and non-treated villages together. Wage rates per day, in general, were found to be the highest in cultivation of aman paddy followed successively by cultivation of jute, aus and wheat. In case of boro paddy for which data are avaible for 1967-68 only, wage rates were found to be higher than those for jute but lower than those for aus paddy and aman paddy. The inter crop variations in wage rates reflect the degree of importance attached to cultivation of different crops in West Bengal. The fact that wheat was only being just introduced during the sixties and acreage under wheat was small relatively to that under other food crops explains the relatively lower wage rate for wheat cultivation.

Wage rates ranged from Rs. 1.18 to Rs. 3.72 for the local varieties and from Rs. 1.94 to Rs. 3.69 for the H.Y.V. for all the crops and for all the villages taken together. Co-efficient of variation for the total average weighted agricultural wages for local varieties of the crops covered by our investigation for the five different years: 1963-64 to 1967-68 is estimated to be 27.85%. The crresponding co-efficient of variation for H.Y.V. crops covered for identical years has been estimated to be 25.52%: The high co-effiicient of variation for both the varieties is explained largely by the introduction of H.Y.V. crops during the year 1967-68 indicating substantial positive impact of H.Y.V. crops on agricultural wages as a whole.

III

Data published in Agricultural Wages in India, Agricultural Situation in India and collected from the Directorate of Statistics, Krishi Bhavan, New Delhi help us making an intercomparison of rates of changes in money wages and real wages as between different states of the Indian Union. Table below represents such data for Punjab Kerala and West Bengal :

It appears from the table that both money wage rates and real wage rates have recorded highest progress in Punjab. Kerala, although it has a leftist government for the last decade and although workers are much more organised there and enjoy stronger bargaining position, could not record as high a progress in these respects as Punjab. The position of West Bengal is much worse in these respects compared to other two States. Although between 1962-68 and 1971-72 real wages for agricultural labourers in West Bengal have somewhat advanced, between 1962-63 and 1967-68 real wages actually dropped. This is not inconsistent with the trend revealed from the Farm Management data analysed above.

The principal factors responsible for the variation in the rates of advance in agricultural wages as between different States are differences in pace of adoption of high-yielding varieties of crops and advanced technology, supply of farm requisites, dissemination of

Table

Money Wages (total in paise/day), Real Wages (total in paise/day and Consumer Price Index Number for Agricultural labourers (A.C.P.E., the Deflator) during 1962-63 to 1971-72.

	1962-63	64-65	65-66	66-67	67-68	68-69	69-70	70-71	71-72
M.W.	289	328	414	408	519	626	688	689	693
Punjab A.C.P.I.	104	139	138	174	193	193	196	194	205
R.W.	278	236	300	234	269	324	351	355	338
M.W.	225	246	283	333	409	436	446	489	490
Kerela A.C.P.I.	107	132	150	161	172	195	202	214	211
R.W.	201	186	189	207	238	224	221	229	232
M.W.	180	210	252	288	312	286	301	298	329
West Bengal A.C.P.I.	123	136	170	197	241	200	198	206	210
R.W.	146	154	148	146	129	143	152	145	157

extension education, consolidation of holdings, tenurial and other reforms, creation of irrigation facilities, attitude of the farmers towards innovations and encouragement by the Government.

Agricultural wages for farm labourers are thus observed to be relatively high for such crops as high-yielding varieties of aman paddy, jute, aus paddy, etc. which are grown in a relatively large area, for years which are relatively more favourable for crops from the point of view of climate and similar other factors and for areas which provide more favourable environment for efficient cultivation and adoption of high-yielding varieties.

References

Government of West Bengal, Department of Agriculture and Community Development, Socio-Economic and Evaluation Branch : Study of Farm Management and Cost of Production of Crops—West Bengal. Vol.1, Cal. (1964), Vol. II, Vol. IX, Vol. X, Cal. (1972).

Capital Formation in Meiji Japan: A Case for the Bond Commutation—I

Tomotaka Ishimine *

Introduction

The first half of the Meiji period (1868-1913) is a crucial period in the economic development of Japan. This is the period in which the groundwork was laid for her economic development. The Japanese model is a very unique one and defies simplistic approaches that attribute her growth to a few strategic variables. The road to industrialization was capitalistic in the main but hardly similar to the Western paths. It was a balanced growth in that the mass of capital, labour, and entrepreneurial talents of both public and private sectors was directed towards all around economic development. At the same time, it was an unbalanced growth, for in the process of industrialization, the dualistic structure of Japanese economy was created and intensified (Shinohara, 1970). As for economic and political environment, Japan combined skillfully freedom in economic activities and authoritarianism in the political area. Japan was fervidly nationalistic, yet did not frown upon learning and adopting Western concepts and technology when necessary. Japan has seemed to be a country of contradiction, and this is also evident in the economic sphere.

And, it should be pointed out here that although Japan's case is unique there may be enough common experiences in her developmental process that can be screened out and perhaps, with careful modifications, can be adopted by some of the "developing" countries ——countries which have been striving hard with little success in their endeavor toward economic development. This paper was written to shed some light in this regard.

In order to fully understand Japan's period of development, one must take many factors into consideration. It is important to consider political and social background of the early Meiji period. Also, it is beneficial to examine various ways through which capital was accumu-

---

* Deparment of Economics California State University, Long Beach, USA.

lated in the early period, and to the role of the government in encouraging industrialization in this crucial period, as well as the response of the private sector to the government initiative. Conclusions will follow.

The Meiji Reforms

First it is necessary to study the political and social farmework of the Meiji period. The Meiji era begins in 1868 with the Tokugowa Shogunate returning governmental power to Emperor Meiji (Taisei Hokan). Although a few battles followed, overall it was a relatively bloodless coup carried out mainly by the discontent lower-echelon Samuri of the coalition of the four clans (Satcho-dohi).

The first task of the new government was to destory the political, social, and economic foundation of the old regime. On the political front, the new government, in 1869, urged the feudal clans to return "voluntarily" the registers of land and people to the Emperor (Hanseki Hokan), thus reaffirming the sovereignty of the Emperor. The next year the government abolished the clans and set up perfecture system (Haihan Chiken). Although many clan boundaries remained intact under the new prefectures, the government, through some amalgamations and boundary modifications, confirmed its authority over new political subdivisions. Once the transfer of the power was effected, the government proceeded to abolish the social foundation of feudalism through various proclamations. For instance, under these edicts, new freedoms were provided for all people to wear clothes of one's choice and to marry and to take occupation of one's choice. And as a result, the caste system (Shi-no-ko-sho) was effectively destroyed.

On the economic front, the government moved swiftly to destory the feudal base and to introduce freedom in economic activities and establish a private enterprise system. In 1872-73, various craft guilds that had existed under feudalism to ensure a monopolistic position in production, distribution and sales of manufactured items and articrafts were dissolved. In agriculture, the government removed restrictions on crops and lifted the prohibitions to partition and to sell land. However, in order to activate the above measures, the ownership of land had to be clearly established. The government, therefore, issued a certificate of ownership (Chiken) to the landowners to establish property rights. The land ownership thus established was later confirmd by setting up the nationwide register.

The no-less-important matter was the introduction of the universal conscription system in 1872, which deprived the Samurai of their exclusive profession. Now anyone, Samuria and peasants alike, could be inducted into the army which meant eventual eradication of the Samurai.

Considering that it was the discontent Samurai, dispossessed of their power and status and not the peasant or merchants that carried out the Meiji Restoration, it is understandable that the new government looked at the public with contempt. On the other hand, there were the other Samurai who saw the new government as the instrument of the Satchodohi, the informal coalition of the four powerful clans that took the leadership in overthrowing the Tokugawa regime. Their illusion of the new glory for the Samurai quickly disappeared after the government issued one reform proclmation after another.

The government saw three enemies surrounding itself: the discontent Samurai on the right, the peasants on the left, who frequently rioted in the early years of the Meiji, and the foreign enemies. It felt the need of a strong army. It was deduced that in order to maintain a strong army, Japan must have a strong economic base. So the slogan of "Enrich the Nation, Strengthen the Army" (Fukoku Kyohei) became prevalent.

The government's contempt for public was apparent in that the first suffrage was given only to males who had paid a certain amount of tax ; this constituted only 1% of the population. It took twenty-two years after the Restoration before the first Imperial Diet was held (though it was the first parliament ever held in Asia) in 1890 and the Constitution which was formed in secrecy and patterned after the Bismarck Constitution, was promulgated only a year before this Diet.

It is interesting to trace the fate of the Samurai after the Restoration. With the abolition of the clans and the clan stipends, many of the members of these clans were absorbed into the occupations where they excelled, i.e., the army, the police and the government bureaucracy. Still many more of them went into agriculture, factories, and business ventures ; a few become entrepreneurs. However, most of them went through traumatic experiences and subsisted on a meagre pension. For the moment, these discontented Samurai provided a threat to the new regime. However, after the Seinan Rebellion in 1877 was decisively crushed by the government forces on the conscription army, a faint dream of restoring the old Samurai glory all but disappeared.

It is with this backgroud that early economic development in Japan took place. It is essential that one has to have a proper perspective for the role of the Samurai and the government in order to appreciate the causes of successful economic growth in early Japan.

Capital Formation

It is informative to start with a simple production function to understond the causal relationship between output and factors of inputs in an attempt to search for causes of economic growth. We have the following production function :

$$Y=f(K, L, R, T, G)$$

where Y denotes output ; K, capital ; L, labor ; R, other resources ; T, techonology ; G, government role (for institutional factors). It can be pointed out at the outset that securing labor was not much of a problem in Japan, especially in the light of a tremendous emphasis put on universal education and successful pursuit of that goal in the Meiji Japan. Also, Japan, a resource-poor country, later turned her economic disadvantages into advantages by obtaining the best available resources at the lowest cost from all over the world. And, althrough Japan was handicapped by a lack of technology, this void could be filled as long as there were willing supplies of technology and as long as Japan was endowed with diligent people, whose educational aspirations dated back even to the Tokugawa period.

Although the above treatment of labor, resources, and technology is too casual, our purpose here is to concentrate on the way capital was accumulated in the Meiji Japan. And, this is the most controversal topic among economists that have attempted to assess the major causes of economic development in the Meiji period. Discussion on the government role and the role of private enterprise will then follow.

Among development economists, it is agree that there exists so-called vicious circle of low income, low saving, low capital funds, low investment and low income. It is also agreed that one useful way to look into the problems of economic development is to break into this chain reaction relationship and follow up the process of growth. Furthermore, there is little disagreement that investment capital, as opposed to commercial capital, was one serious bottleneck in the early Meiji.

However, agreement generally ends here. Many Japanese economists attribute accumulation of capital in the Meiji Japan to the land tax reform (Chiso-Kaisei) and resulting "exploition" of peasants through high taxes—taxes that ofter went as high as 40 to 50% in terms of their annual crops. The popularity of this interpretation has undoubtedly been due to generally sympathetic acceptance of Marxist interpretations among Japanese economists, interpretations which were extended to the West by the authoritative and informative work of E. H. Norman, *Japan's Emergence As A Modern State*, first published in 1940 in New York.

There is no denying the above factors ; high taxes on peasants and low wages for labor, were the important contributive elements of capital formation in the Meiji Japan. One might add, as it is rather a very popular interpretation, that Confucious tradition and its emphasis on frugality contributed to high savings ratio and hard work characterized by the Japanese people.

However, other contributive factors are often neglected or downplayed by the mainstream of the Japanese academia, i.e., the role of commutation of the rice stipends of the Samuria into government bonds and their later conversion to investment capital. No less important matter that contributed to the industrialization of Japan was the monetary reforms in the early Meiji period. It is of no trifle significance, in the light of unsuccessful attempts by many developing nations of today, that these "fiscal and monetary policies" were skillfully adopted by Meiji Japan, and that there were government leaders and bureaucrats who understood the working of these economic policies.

The Commutation of Pension (Chitsuroku Shobun)

The basis of the former ruling circle, i.e., the Daimyo, Samurai and the nobles was basically rice. The Daimyo extracted rice revenue from the peasants. The Daimyo, in turn, provided rice stipends to their Samurai. When the new government took over, the revenue and stipends were not suspended outright but continued in the form of money from the general tax revenue, though on a reduced scale. However, the contibution of the goals of the new government, and the revenues and stipends based on the feudal system were apparent. Furthermore, the new government wanted to convert these former rulers into productive members of the society under the new regime.

The government, therefore, began in 1874 to provide bonds to the Daimyos and Samurai in exchange for voluntary submission of their rice revenue. Those who did not submit were taxed heavily. Only one-third of the former ruler, now called Kazoku and Shizoku, responded to the voluntary renunciation of stipends, and the government's financial burden to the rest who continued to receive annual pensions from the new government was considerable. The government, therefore, issued an ordinance in 1877 which made conversion of the pensions to the bonds mandatory. Altogether, the face value of yen 198.3 million of bonds, together with some cash provision of yen 20 million, was provided to 449,500 nobles, Daimyo and Samurai. This group constituted about 5-6% of the population at that time (a considerably larger percentage than the percentage of the French nobility, which was estimated roughly as 0.5-0.6% of the population at the time of the French Revolution).

The bonds were largely medium term in maturity, ranging from 5 to 20 years. A degree of asset and income equalization was introduced into the bond structure so that the Daimyo and the Samurai with high revenue and stipends received a depreciated value of bonds, the depreciation factor being shorter years of maturity for higher bond value. Also aimed at equalization was the interest structure so that lower interests were attached to bonds with larger value and higher interests were attached to those with smaller value ; the interest ranged from 5 to 10%. In order to make conversion of bonds into investment capital easier, the government issued a regulation on the national banking system, patterned after the United States national banking system, to set up private banks under the national charter (Inoue, 1971).

In short, the government intended to achieve four goals at the same time by the bond provision : 1) to provide assets and income to the former rulers in order to lessen the shock of the transition and to keep their loyalty to the new regime ; 2) to provide investment capital for the economy ; 3) to decrease the financial burden of the new government so that it could embark on more important tasks of laying the foundation for economic growth ; and 4) to introduce a degree of equalization of assets and income among the former rulers. The fact that this policy was undertaken some one hundred years ago was an extraordinary achievement.

To what extent this measure contributed to create investment capital is hard to assess. Many Samurai with small incomes had to resort to mential jobs and had their wives and daughters work in unsavory professions. The government took various measures to convert them to productive members of the society by providing low-interest financing, selling them uncultivated land at a low price, and employing them in the state land reclamation in Hokkadio. However, not many of the former warriors were good as merchants and farmers, although there were some important exceptions such as Shibuzawa Eiichi and Iwasaki Yotaro. In addition to 198.3 million yen bonds that were provided to the nobles, Daimyo, and Samurai, the government provided 30.4 million yen bonds to the merchants in payment for debts incurred by the Daimyo during the Tokugawa period. Some bonds went to Shinto priests as well.

Among the major companies that were set up, mainly with the capital provided by the Kazoku, (nobles and Daimyo) were many national banks (Kokuritsu Ginko, which were nationally chartered but privately owned). Japan Railway (Nippon Tetsudo Kaisha), Tokyo Marine Insurance (Tokyo Kaijo Hoken Kaisha) and Osaka Spinning (Osaka Boseki Kaisha). Other Companies were set up mainly with the capital of the Shizoku (Samurai) such as Nagoya Spinning and Onoda Cement.

Commercial Capital

All this is not to belittle the role of commercial (or merchant) capital played on this crucial period. The market was expanded in the Meiji period beyond comparison of the Tokugawa period through the abolition of craft guilds (Kabunakama), the border stations (Sekisho), and other measures of economic freedom. In addition, the role of the merchants increased though rising exports of silk or imports of cotton products and other items. The land tax reform which converted tax payment from rice to money also helped to enlarge the market. The merchants' revenues thus increased were, in turn, invested in filature, banking, transporation and so forth. Though many wealthy merchants (Gosho) went into bankruptcy during the period of the confusion in the early Meiji, other merchants not only continued to exist but also expanded their activities tremendously though acquisition of revenue, bonds, and real estate. Particularly notable among the successful were the Mitsui, the Sumitomo, and the Ono.

After emphasizing the role of what may be called the "bond capital," it is now necessary to examine the role of the land tax reform in its context of capital formation in Meiji Japan.

The government inherited the old tax system based on feudal jurisdication that varied widely among the former clans. Since the tax was based on the yield of the land and paid in crops, the tax revenue accrued to the government was subject to variation. Under the old system, the government also had to assume the responsibility of assessing crop yield and sales every year.

Furthermore, the cities' lands and the property of the Samurai were exempt from taxation, which contradicted the sense of equity under the new regime.

The Land Tax Reform (Chiso Kaisei)

The government, therefore, began in 1874 to make a wholesale revision in the tax system to eliminate the inequities and to base tax assessment upon a uniform code on a nation-wide scale and to secure revenue that was independent of the annual variation of crop yields. The new tax system was to be based on value of land, which was more stable than crop yield. The land value was to be subject to reassessment every five years. Secondly, the new tax was to be imposed on landowners, be they cultivators or absentee owners. This differed drastically from the old system which imposed tax on cultivators, be they tenants or landowners. As mentioned previously, in 1872, certificates of ownership (Chiken) had been issued for this purpose. Imposition of tax on landowners, rather than cultivators made the new tax system independent of revenue from crop yield and, therefore, from the government's point of view, made the system more stable.

The third characteristic of the new tax system was that the payment was to be made in money, rather than in crops (mostly rice), so that the burden of conversion of crops into money now fell on the farmers. This measure, in turn, facilitated the penetration of money economy into the countryside.

The new tax was to be 3% of the assessed value of land. When local tax was added the percentage came close to 4%. Despite new features, the new tax meant little change to most farmers in terms of the burden it placed on them. Indeed, the figure 3% or 4% was derived in such a way that the tax revenue under the new system would be no lower than under the old system. For example, the 3% or 4% of land value come close to 40-50% of the value of the annual crops, if the unit of land area yielded crops ten times the value of the land.

In addition, the farmers now had to take the responsibility of converting their rice into money which exposed them to the vicissitude of price fluctuation and hard bargaining with the rice brokers. Although the certificates of ownership clearly established the property rights to the landowners, they also revealed many hidden lands, which were overlooked under the feudal lords. The tax on these revealed lands increased the real burden for the landowners. Forest and communal lands, from which farmers obtained fodders and wood, were transferred to the government. This, too, increased the real burden for the farmers since the farmers were now excluded from these lands.

Furthermore, the land cum tax reform left the tenant system intact. For the tenants, this meant an additional burden. For while the new tax was to be imposed on landowners in money, the rent payments by tenants to landowners were still in the form of crops, which continued to be 40% to 50% and sometimes went as high as 60%. As the money economy penetrated into the countryside—while the rice price continued to increase due to over supply of currency to finance domestic wars and various reform programs—the landowners, including "landlords," benefited at the expense of tenants. Hence, some wealthy landlords (Gono) continued to invest in new industrial ventures as they had done under the feudal system, in land, processed foods (especially in miso and shoyu) and money lending. Here Confucian emphasis on frugality may have attributed to the landlords' investments in Japan as opposed to some other lands. By and large "conspicuous consumption" was never a way of life in Japan, even in the limited context of feudalism.

It is necessary to point out that productivity in agriculture in Japan had constantly improved even under feudalism through better irrigation, fertilization and introduction of hybrid varieties that were more productive (Beida, 1970). As a consequence, the agricultural population in the Meiji Japan was not in surplus to the point of "zero" or "negative" marginal productivity. Whatever surplus of agricultural labor there existed, the industrial expansion was just fast enough to absorb the surplus labor, mostly in the textile industry. And, industry was expanding mainly because of investment capital that was created through the commutation of pension and the land tax reform. The outlet for capital was, in turn, provided in no small part by the government policy of the Shokusan Kogyo (Encourage Industries).

The Currency Reform

The are two more factors that are less conspicuous but nevertheless important in assessing the economic development of the Meiji Japan. One is the currency reform by Matsukata Masayoshi, the Minister of Finance at that time, and the expansion in the export market that was largely a product of good fortune.

The first fourteen years of the Meiji period generally saw an inflationary tendency because of the supply of the various inconvertible government notes which were issued to finance various government programs, to retrieve the clan money (Hansatsu) and to finance domestic wars, especially the Seinan Rebellion. Although the commutation of pensions to bonds avoided inflationary impact at the outset, it, too, began to fuel inflation as some bonds began to be converted into cash. Also some bonds fell into the hands of banks, and the latter, in turn, used them as a reserve for supplying convertible bank notes. Although the inflation initially stimulated the economy, it later produced adverse effects as imports began to soar and interest rates increased. Unlike farmers who enjoyed higher income due to the rise in the price of rice, the Samurai who lived on fixed incomes and the merchants who needed low cost financing were particularly adversely affected (Ikeda and Sasaki, 1967).

Matsukata, who became the Minister of Finance in 1882 adopted deflationary policies by controlling money supply, curbing government expenditures, and imposing new taxes. He set up the Bank of Japan and issued convertible central bank notes for the first time. For the subsequent four years the ensuing severe deflation affected most of the farmers. Lower income resulting from the decrease in the rice price also affected the land price. Many farmers were compelled to sell their farm land for sustenance or to finance debts. However, the deflation had some favourable effects in affecting investment. Confidence in the currency was restored, the bond price increased, and interest rates and wages declined, all of which stimulated domestic investment. Exports began to increase, and Japan enjoyed trade surpluses and the consequent inflow of reserve currencies. Paradoxically, it was the deflationary policy that laid the foundation for sustaining the development that took place in the later Meiji period.

Export Growth

Not all favourable factors for economic development in Meiji Japan were domestic in origin. In retrospect, there were many world circumstances favourable to Japan. The later half of the 19th century was a turning point for the world, from an economy based on skills and experiences to one based on science and technology. Although the world's steel industry began to emerge and ocean transportation had been converted from sailing to steamships, the large-scale petroleum, chemical, and power industries were yet to emerge. The corporate form of business organization began to take over proprietorship or partnership. The world economy was dominated by the principle of laissez-faire.

Until 1884 when the deflationary policy began to be implemented Japan had suffered severe deficits due to the inflation and resulting increase of imports of general merchandise, especially cotton products. Imports of machines and equipment which were needed for industrialization also had soared. At that time, very few industrial items were exported because there was no modern industry to speak of. At that time Japan was, in effect, on the silver standard. Although depreciation of silver vis-a-vis gold in the world market helped the yen, the adverse effects of resulting inflation outweighted the favourable effects of the depreciation of the yen.

However, as the deflation policy took effect, Japan's exports, mainly silk and tea, began to pick up. Just when Japan needed desperately a foreign market for silk and its products, silk production in Italy, the traditional supplier of the product in Europe, suffered a severe set-back due to a silk worm disease of an epidemic proportion. From Japan's viewpoint, this was a fortunate coincidence. It was fortunate, too, that consumers in Europe, with their incomes gradually increasing began to develop tastes for silk products, which had hitherto been considered luxurious items available only to a wealthy few. One should not, however, exaggerate the importance of foreign markets for Japan. It was largely the expanding domestic market that most of the emerging industries found to be the outlet for their products. Initially demand invariably came from the government. This is true not only for military items but also for "nonmilitary" items such as paper, glass, wool products and shoes. Furthermore, the domestic market was also enlarged as the population grew, as people's income increased, and as the way of life gradually began to change. Development of a means of transporation and communication, and the resulting increase in commercial transactions and mobility, also enlarged domestic markets.

However, it should not be forgotten that at the time when 70% to 80% of the people where engaged in agriculture, the purchasing power of these farmers increased as a result of several factors : the land tax reform ; the policy of price support for rice ; and development of secondary occupations for the farm households such as establishing the cacoon industry and tea crops (Lockwood, 1968).

It is interesting to note that the main impetus for increase in the domestic industries was the initial importation of inexpensive products from abroad. Many imported items replaced traditional domestic products. This is true for cotton yarn and sugar. Kerosene for lamps began to replace wax and rapseed production, and Western-type paper (Yoshi) began to replace the Japanes-type paper (Washi). However, Japan began to manufacture these items as import substitutes.

In starting our discussion we used the following general production function :

$$Y=f(K\ ;\ L.\ R,\ T\ ;\ G)$$

Our K, capital formation, can now be formulated, in the context of the Meiji Japan, as

$$K=f(B, LR\ ;\ MR, X)$$

where B denotes the bond policy ; LR, the land tax reform : MR, the monetary reform ; and X, exports. Going back to the first production function, we now turn to the role of the government in the economic development of the Meiji Japan.

(Continued from page 192)

fall in prices—negative inflation ! If prices are steadily falling, saving is automatically rewarded in the form of increased purchasing power. It will be recalled of course that banks would no longer charge "interest", this being an unearned income. The banks would charge a minimal percentage for administration and insurance. Under the Centre Policy, investment is directed according to national priorities and the quality standard of the business concerned, rather than with the sole object of making a profit for the bank.

Combined monetary/economic strategy is thus as follows.

Stability of wages and prices based on work evaluation ensures fair wages and prices, and a monetary stabliity which in turn allows maximum economic expansion. The monetary unit has scientific definition in terms of the basic work-unit. Money is no longer a commodity, it is a credit facility. The quantity of credit is regulated so that monetary demand equates with the total value of goods and services available ; credit must be expanded to the maximum capacity of the economy in order to assist in the stimulation of growth in all sectors. Credit extension is based on Standards and on the directives and priorites of national economic planning.

SADHANA *Beauty* CREAM

herflattering loveliness –

The reward of her day to day beauty care with Sadhana beauty cream.

Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.

—essential in day to day Beauty care

SADHANA AUSADHALAYA DACCA

CALCUTTA-48

Branches all over India

SBC. 5/71

Annual
Inland Rs. 30.00 (Net)
Foreign US $10.00
Postage by surface
US $2 00
This Copy Rs. 2.50

REGISTERED NO. WB/NC 80
R. N. No. 5182/57

Published by H. Roy from 10, Galiff Street. Block 5, Suite 64, Calcutta-3
and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh
Lane, Calcutta-6. Editor : Himansu Roy. **Phone : 55-0477**

ECONOMIC AFFAIRS

- Information Theory as a Tool to Aid Poilcy Making for Population Control in a Developing Country Such as India
- Land Use in Agriculture
- Technology and Agriculture in Bihar
- Unemployment and Rural-Urban Conflicts
- Gandhian Solutions of Modern Indian Problems: A Fact or Tact?

Central Budget

- Indian Economy 1976-77

Vol. 22, Nos. 6-7 JUNE-JULY 1977

Revised Annual Subscription Rates :

India :	**Rs. 30.00**
Foreign :	**US $ 10.00**
Postage :	**$ 2.00 (by surface)**

Single Copy (ordy.) Rs. 2.50

Outstation cheques shall bear Rs. 5.50 extra.
Effective from January 1977.

15 September 1976

Sd/ **M. Roy**
Manager,
Economic Affairs

WEST BENGAL GOVT. PUBLICATIONS

The books which will help you to know
West Bengal better :

25 YEARS OF FREEDOM

Price : Rs. 5/-

This book is of considerable value to those who are deeply interested and involved in the economic and social regeneration of West Bengal.

●

LABOUR IN WEST BENGAL

Price : Rs. 5/-

This is an annual publication of the Labour Deptt., Govt. of West Bengal. This is indeed a useful book on labour intelligence and will benefit the employers, employees and interested public at large.

●

GANGASAGAR MELA

by

Shri Tarundev Bhattacharya

Price : Rs. 2/-

This is a pilgrims' guide book. It contains both mythological and historical records about the largest fair of West Bengal held in the Middle of January every year. It also contains detailed information about Sagar Island where the fair is held, route chart, map of the fair ground and number of pictures.

Available at :

(i) *Publications Branch,* West Bengal Govt. Press, 38, Gopalnagar Road, Calcutta-700027 & (ii) *Publications Sales Counter,* Govt. of West Bengal, New Secretariat Buildings. 1, Kiran Sankar Roy Road, Calcutta-700001.

W. B. (Inf P. R) Adv. 8990./77

Contents

Editorial

211 Gandhian Solutions of Modern Indian Problems: A Fact or Tact ?

214 Review

216 Voluntary Price Freeze

Articles

Venkareddy Chennareddy

217 Information Theory as a Tool to Aid Policy Making for Population Control in a Developing Country Such as India

Tomotaka Ishimine

226 Capital Formation in Meiji Japan: A Case for the Bond Commutation—II

G. P. Mishra

233 Land Use in Agriculture

Putal Rani

245 Technology and Agriculture in Bihar

Vishwa Mittar and J. R. Gupta

253 Green Revolution and the Inter-District Variations in Agricultural Wages in Punjab (1957-73)

K. N. Ninan

257 Unemployment and Rural-Urban Conflicts

Features

266 Central Budget 1977-78

274 Indian Economy 1976-77

ECONOMIC AFFAIRS

Volume 22 June-July 1977 Nos. 6-7

Gandhian Solutions of Modern Indian Problems : A Fact or Tact ?

A powerful section of Janata leaders has rediscovered Gandhian solutions for India's modern problems and has patently been accusing Nehru, said to be the father of modern India, and his daughter, Srimati Indira Gandhi ; the former for sowing the seeds of economic crisis and the latter for rearing them. It holds that Gandhism and Nehru's democratic-socialism are direct opposite. Democratic-socialism is a failure ; for 'democracy' and 'socialism' are two opposing concepts ; 'political democracy' is bound to refuse communist economy.

Gandhism is 'rediscovered' in that all the Janata constituents had earlier rejected Gandhism in collaboration with Nehru. Some of them, and in particular some leaders of them, had even actively participated in evolving the genesis of 'democratic-socialism' and energetically tried to implement it until they had to quit the Congress. It may be a different matter but is certainly a relevant matter for the future of the country. For it is high time for the Janata to express in no uncertain terms that its ideology is this and not that ; that it believes in Gandhian philosophy and not in democratic-socialism nor in communism nor in capitalism, modified or otherwise. And it should also give its own interpretation of Gandhism. It will not pay for Janata if it attempts to confine Gandhism in accusing Nehru-Indira regime simply by pointing out that Gandhi sought to give priority to agriculture and handicrafts, Nehru rejected it and moved to large-scale industrialization through expansion of public sector. Gandhi sought to make the village the centre of development for the uplift of the poor, Nehru went to the opposite end. Gandhi was against mechanization, Nehru adopted it as an economic creed leading to growing disparities in income distribution, monopolies and unemployment. Gandhi's way was to free the economy, Nehru was for nationalization and state capitalism. And so on.

It may be argued, and correctly, that Gandhism is not a 'system' ; nonetheless it is based on certain strong foundations and if they are not taken as a whole as a system, it will be an opportunistic use of his ideas. Gandhi advocates decentralization of political power to the point of a stateless society to abolish the political power finally. His ideal society is to be governed by 'village panchayats', which knock out centralization as a system and at the same time ensure a non-violent structure of society. Now, does the Janata stand for such a stateless, panchayat raj society? Possibly it does not. Had it been so it would not have dissolved the nine State Assemblies to strengthen the power of the Centre, which it has captured from above.

On economic front, Gandhi pleads for replacement of machines by the use of human labour, wherever possible, for simplifying the social and economic structure. He is opposed to all 'classes', be it capitalist, managerial, bureaucratic, or technical. Does the Janata agree to it? The Janata should at least pronounce its say in these basic ideas of Gandhi. One thing should be made clear that practice of some ideas, e.g., more use of labour than capital in economy, does not mean acceptance of one's ideology in toto. Mao's China has put many things found in Gandhi's ideas in practice but that does not make any sense to say that China has gone the Gandhian way.

Gandhi's political leadership was accepted by the then Left leaders, including Subhas Chandra Bose. But none of them, Nehru inclusive, accepted his spiritual, social or political philosophy. The progressive section of his time wanted to reconstruct the free India on national foundation of higher unity of the bests of the past and contemporary world, in its own way. Power fell on Nehru. A student of western democracy with a cleanly washed brain for communism he combined readily democracy and communist economy shortly to find himself in an economic mess because of the scuttling of democracy itself by the very same political compradore which once washed his brain so cleanly for communism. That is, he offered a democracy in the context of socialism which was not disciplined. Bose wanted a viable scientific synthesis between nationalism and socialism. To him democratic nationalism has a tremendous inherent force for creating love and discipline for work as it contains a coercive democratic force for national dynamism. His concept of democracy is a matter of expediency that has at the same time a deep regard for the immortal values of individuals and national heritage. Speaking differently, his democracy is not the liberal constitutional democracy of the West, nor the coercive people's democracy of the communist countries, but one that suits best the Indian conditions for the rapid development of India in her own way. On its back however he was inclined to keep stand-by a system of democratic compromise that can, if required, exert force upon the recalcitrants to work for the people. Socialism was to him a social justice, the means for balanced rapid growth and a tool for class collaboration in the context of fast moving modern world. Gandhi lagged behind all these advanced ideas. His rejection of Western culture and science was complete and his revivalism was primitive in that it had no respect for the universal outlook of the modern world. It is for the Janata to justify in plain and non-political language that it can go the Gandhian Way for a New Order for India that can nonetheless have its identity with the world led by sophisticated arms and industries.

There is the other side of the coin. "Gandhi" is a name that has an excellent charms to Indians. This name had been used on many occasions earlier for opportunistic cause. It was used most by Srimati Indira Gandhi. The logic rejected her eventually and inevitably.

* * *

EMPLOYMENT AND PRICE IN INDIA

Employment (000) 1976		*Price Index* (1961-62=100) 1976
9397	January	—
9422	February	360.8
9353	March	354.2
9380	April	360.9
9535	May	365.7
9609	June	370.7
9774	July	386.1
9625	August	387.8
9639	September	392.2
9587	October	391.1
9682	November	391.1
9772	December	394.9

Review

The Real Wages of Industrial Labour in India, B. K. Madan, Management Development Institute, New Delhi 110057, 1977, Price Rs. 15.00.

The monograph under review deals with the index numbers of money earnings of industrial labour computed by the Census of Indian Manufactures and the Annual Survey of Industries and compares the results of the author's analysis of the earnings of the same with those presented by the National Commission on Labour and then proceeds to draw out the share of workers' earnings in the Value-Added-by-Manufacture for the combined manufacturing industries and for certain selected industries, and finally studies the relationship between the trends in wages and trends in productivity in Indian industry leading to the observation that "the disparity in economic rewards of the employed population—as between workers and other employees—is observed to have remained much the same, contrary to the impressions reflected in reputable writings which refer to a marked widening in such disparities." The importance of the book lies in its challenging revelation that the labour had not been denied of its legitimate share in the national income. The real earnings of the workers "increased by at least as much as per capita national income and a little more. It reflected a greater increase—relative as well as absolute—in the quantitative input of other factors of production, in particular of capital and technical and supervisory personnel. The rate of reward of these other factors did not grow at a greater rate than that of workers during the period."

Multinational Firms, S. Shiva Ramu, Sultan Chand & Sons, New Delhi 110002, Price Rs. 30.00.

The author introduces that the first four chapters of the book are devoted to analysis of the internal adaptations in different functional areas of a multinational firm starting from goal determination to its strategies in the area of finance, product-market and management. The succeeding and final chapter views the genesis of multinationalism in firms under different politico-economic-legal systems of the world. Broken out, the five chapters run into business strategy, financial management, product-market strategy, management strategy, and multinational firms and environment. Thus the book deals almost exclusive with the 'strategies' of multinationals than with the 'tactics' of exploiting the markets beyond the political boundary of their origins, in particular. Quoting Michael Kaser the author has briefly discussed the metamorphosis of multinationalism in socialist economies under the leadership of the USSR. The socialist countries are eager to view their multinational organizations as experiments on mutual cooperation but it is an open question that they provide a greater opportunity for the USSR to exploit the other socialist countries. In the Annexure the author dwells with the joint venture of India abroad showing that the developing countries have the capabilities to enter the race of multinationalism.

The book can claim success in its profound analysis of the intricacies of operations of multinational firms.

Money, Banking, Trade and Finance, K. P. Sundharam, Sultan Chand and Sons, New Delhi 110002, 1977, Price Rs. 18.08.

Statistical Methods, S. P. Gupta, Sultan Chand and Sons, New Delhi 110002, 1977, Price Rs. 18.00.

The book on Money, Banking, Trade and Finance is divided into six parts : Monetary economics ; theory of income and employment ; banking and financial institutions ; international trade and foreign exchange ; Indian currency and banking ; and public finance. Each part makes exhaustive discussions of the modern topics in a critical way satisfying the needs of the advanced students.

The Statistical Method, the low-priced nineth edition, is a voluminous work of the author on theories of statistics. Illustrations and solutions of problems have enhanced the usefulness of the book to the students preparing for higher examinations in Statistics. The chapter on Indian Statistics has given an applied orientation to the work.

The students will find both the books valuable.

Voluntary Price Freeze

The capitalist world has experienced many facades of business dishonesty, the latest one is raised by some Indian business communites in their public announcement, endorsed by the Government, that they will voluntarily freeze prices. In a competitive market there is no 'voluntary' input that can be manipulated to freeze or reduce prices. For the price is the result of invisible creation. Only in an imperfect market this input works. And the greater the degree of imperfection of markets or the intensity of monopoly capital the greater is the perfection of voluntary price freeze. Thanks to the Indian business communities, confirmed by the Janata Government, that the national economy is in the tight hands of monopoly capital.

Economic laws and economic mind are no respecters of "change of heart" (i.e. a heavenly communication) nor of "pledge administration" as one we have seen on the country's top smugglers and and blackmarketers, administered by the 'total revolutionist' Mr. Jayaprakash Narayan. To a man of common sense, both monopoly and smugglers are the by-products of an economic system. So long as the system is not changed radically, they will exist and flourish, much to the admiration of the elite section of the society. For the by-products are not less important and acceptable to the society than the products themselves.

The Janata Government has resorted to popular political policy of accusing the preceding Indira Government for the price rise resulting from deficit financing, never mentioning that her Government left behind an all-time record amount of foreign exchange and a buffer food stock to feed the entire country for a number of years, and forgetting the very fact that its Prime Minister was one of the master-makers of the deficit financing, while he was the Finance Minister under the Nehru Government. However, Indira Government also once blamed the Syndicate-led Congress to shield all her Government's initial failures. This way of covering oneself does not pay. The country needs a new awakening, a new thinking, a new order. As a first measure it needs a net increase of production relative to net increase in population, subsidization and public distribution of all essential commodities, fair distribution of income, and a corruption-free administration.

Information Theory as a Tool to Aid Policy Making for Population Control in a Developing Country Such as India

Venkareddy Chennareddy*

Economists, demographers, statisticians, politicians, government, and the public have all been concerned with the burning topic of population control in under-developed, as well as developed, countries. This topic has attracted the attention of governments and development economists more in recent decades than earlier because of the intensity of existing and anticipated problems created by the population explosion. World population grew relatively slowly in the early part of the twentieth century. This slow growth can be attributed to the Malthusian phenomena of disease, famine, epidemics, and wars. Those conditions were especially true of an underdeveloped country such as India. After political independence was achieved in 1947, Indian government's economic development programs, including public health programs' helped reduce death rates, thus widening the difference between birth and death rates. The increased gap between the two rates, coupled with the high absolute level of total population, contributed to a serious population explosion in India.

The need to abate population growth, especially in an underdeveloped country such as India, is no exaggeration. Control of population size is one of the most important instruments for planned economic development that an underdeveloped country has availed for achieving higher levels of living for its people. Moreover there can be no economic progress in any nation if the population growth rate is as or higher than the economic growth rate. The government has alredy tried to educate people about a number of birth-control techniques.

---

* Associate Professor of Economics and Acting Chairman of the Department of Economics, Talladega College, Talladega, Alabama, U.S.A.

In a democratic country that has large population as India. Simply educating people on the necessity of birth control is not enough because many factors—social, economic, cultural, psychological, religious, physical, and locational—operate to produce a stronger contrary effect on family size. Sucessful population planning requires considerable information on various factors affecting the growth of a family. Identification of these factors and knowledge of these factors can help family planning agencies allocate resources in an effort to manipulate these factors successfully, thereby inducing people to absorb, accept, and use this information or assistance.

Experience based on general observation leads to the hypothesis that there is a negative relationship between caste rank and birth rate. This is probably true because people of low caste are often poor and have limited education, strong superstitions, and orthodox beliefs. As a result, they have low information absorption capacity. They have also limited access to current information. We may expect that the greater the percentage of people in low castes, the greater is the birth rate in the aggregate model to be described latter. There is a clear relationship between a high birth rate and a high infant mortality rate. High infant mortality indicates a low probability of survival of a child, which normally induces families to produce more children, thus, leading to an increased fertility rate. Leibenstein[1] has proposed that decisions about family size are affected by the benefits and costs of having children, who may be considered a source of satisfaction as a consumption good, and a production good as a means of financial security for old age. It is difficult, however, to measure the benefits of having children, but the costs of rearing and educating children can be estimated. It may be hypothesized that the greater the cost of rearing a child relative to family income, the lower will be the number of children a family would like to have. Moreover, various studies have shown that fertility is highly correlated to per capita income and education. Also, a high per-capita income and educational level are often associated with low fertility rate. There is also clear evidence of varying fertility rates among families in rural and urban areas. Urbanization[2] and industrialization definitely have a negative effect on the fertility rate. The flow of information about birth control methods

1. Harvey Leibenstein, Economic Backwardness and Economic Growth, (New York, John Wiley & Sons, 1957), pp 159-195.

2. George B. Simmons, The Indian Investment in Family Planning, Population Council, New York, 1971.

and the existence of communication facilities in underdeveloped countries such as India can be expected to have a considerable effect in reducing fertility rates. Generally, the greater the number of radios, movie theaters and urban centres with 10,000 or more population in a given region or district, the lower the birth rate. Also, the provision of more physical facilities (family planning clinics, hospitals) for dissemination of information on birth control methods are generally related to lower fertility rates. Increasing the number of doctors, hospitals, family planning centers, and also, the amount of government expenditures for family planning tend to reduce the fertility rate in each area. Transportation, especially personal transportation, such as cars, which make the urban centres more accessible, also helps the population become better informed about the benefits, importance, and techniques of birth control.

Electricity is a relatively new source of energy for lighting and power in an underdeveloped country. The extent of electrification of villages in each region may be considered an indicator of economic progress and the extent of modernization of villages. It may be hypothesized for an under-developed country such as India that the greater the progress or modernization, the greater the probability that fertility will decline because people who have adopted such modernization are likely to be those who are amenable to birth control ideas and controlled family size. The proportion of villages close to major urban centers can be hypothesized to have a positive effect in reducing the fertility rate in each region. Because of the lack of personal transportation facilities, which is coupled with low per capita incomes, people in villages that are distant from urban centers seldom commute to those centers and therefore do not receive much family-planning information.

We may also expect to find regional variations in the extent to which people use birth control information. These regional variations reflect a host of factors, for example, variations in customs, habits, traditions, and religious beliefs. This is especially true in India. Regional dummy variables have therefore been added to exhibit such effects in the proposed model. We may also expect some change in fertility rates over time because of general economic development, because of the cumulative information that people receive, and because of the socalled demonstration effect. Absorption and use of this information is a slow but cumulative process that extends over decades and that will have a long-lasting effect on fertility rates.

This effect can be measured in the model by a dummy variable for each census year. Schultz[3] and Simmons[4] have used the methodology developed by Schultz in Taiwan and India. They estimated the relationships between some of the socio-economic variables and fertility and used these relationships to measure the effectiveness of workers in family planning programs.

The purpose of this article is to demonstrate the usefulness of information theory as a tool to aid policy making for population control in a developing country such as India without bringing changes in law for enforcing birth control. The proposed research methodology based on information theory will be useful for the researchers especially in India who can empirically estimate the model using data on India and can come up with important and effectively implementable policy design for rapid population control in India. This proposed research methodology is an attempt to go beyond the efforts of Simmons and other researchers in the field of fertility. In the first phase the following regression model to measure and test the effect of numerous variables on the fertility rate based on combined cross sectional and time series data is proposed.

$$Y_{it} = \beta_0 + \beta_{itl} X_{itl} + \beta_{it2} X_{it2} + \beta_{it3} X_{it3} + \cdots + \beta_{itk} X_{itk} + \beta_{it\,(k+1)} X_{it\,(k+1)} + \cdots + \beta_{it\,(k+\gamma)} X_{it(k+\gamma)} + \beta_{it(k+\gamma+1)} X_{it(k+\gamma+1)} + \beta_{it\,(k+\gamma+2)} X_{it\,(k+\gamma+2)} + \beta_{it\,(k+\gamma+3)} X_{it(k+\gamma+3)} + \epsilon_{it}$$

where :

Y_{it}=the fertility rate (sum of births per 1,000 women between 14 and 45 years of age) for the i^{th} district in census year t,

i=1, 2...to about 250 (number of districts), and

t=1950, 1960, and 1970 census years,

X_{it1}=infant mortality rate in the i^{th} district in census year t,

X_{it2}=per-capita income in the i^{th} district in census year t,

X_{it3}=a measure of urbanization based on percentage of total population that is urban in the i^{th} district in census year t,

X_{it4}=a measure of industrialization based on percentage of total population that is nonagricultural in the i^{th} district in census year t,

---

[3] T. P. Schultz, Effectiveness of Family Planning in Taiwan: A Methodology for Program Evaluation, Rand Corporation, Santa Monica, 1969.

[4] George B. Simmons, The Indian Investment in Family Planning, Population Council, New York, 1971.

X_{it5} = percentage of all villages that lie within 10 miles of urban centers with a population above 50,000 in the i^{th} district in census year t,

X_{it6} = number of personal cars registered per 100,000 population in the i^{th} district in census year t,

X_{it7} = 0, if the percentage of people in all low castes is lower than 35% in the i^{th} district in census year t, or

= 1, if the percentage of people in all low castes is between 25 and 70%, or

= 2, if the percentage of people in all low castes is greater than 70%.

X_{it8} = percentage of all villages that are electrified in i^{th} district in census year t (a proxy variable for modernization),

X_{it9} = number of movie theaters per 100,000 population in the i^{th} district in census year t,

X_{it10} = number of personal radios licensed per 100,000 population in i^{th} district in census year t,

X_{it11} = number of doctors per 100,000 population in the i^{th} district in census year t,

X_{it12} = number of hospital beds (in all hospitals) per 100,000 population in the i^{th} district in census year t,

X_{it13} = number of family planning clinics or centres per 100,000 population in the i^{th} district in census year t,

X_{it14} = government expenditures in (100,000 Rs) on family planning programs in the i^{th} district in census year t

X_{it15} = a literacy variable based on the percentage of the population with 8th grade education and above in the i^{th} district in census year t,

X_{it16} = number of community development centers in the i^{th} district in census year t,

X_{it17} = an index of the cost of rearing and educating a child weighted by the proportion of rural and urban population in the i^{th} district in census year t,

X_{it18} = average age of women in the age group 14-45 in i^{th} district in census year t,

$$X_{it19} = \begin{cases} 1, \text{ if } i^{th} \text{ district is in a state number 1, and} \\ 0, \text{ if otherwise,} \end{cases}$$

$$X_{it20}=\begin{cases}1, \text{ if } i^{th} \text{ district belongs to state number 2, and}\\ 0, \text{ if otherwise,}\end{cases}$$

$$X_{it40}=\begin{cases}1, \text{ if } i^{th} \text{ district belongs to state number 22, and}\\ 0, \text{ if otherwise,}\end{cases}$$

$$X_{it41}=\begin{cases}1, \text{ if } t \text{ belongs to census year 1950, and}\\ 0, \text{ if otherwise,}\end{cases}$$

$$X_{it42}=\begin{cases}1, \text{ if } t \text{ belongs to the census year 1960, and}\\ 0, \text{ if otherwise,}\end{cases}$$

$$X_{it43}=\begin{cases}1, \text{ if } t \text{ belongs to the census year 1970, and}\\ 0, \text{ if otherwise, and}\end{cases}$$

ϵ_{it}=random error.

Information on some independent variables, if not readily available in the published sources, will have to be obtained from each state or local government or the concerned government agency having such data in unpublished form.

After estimating the above regression model, the estimated value Y'_{it} will be dichotomized and transformed into another variable, as follows:

$Z_{it}=0$, if $Y'_{it} >$ than the fertility target to be achieved,

or

$=1$, if $Y'_{it} \leqslant$ than the fertility target to be achieved.

The fertility targets are based on the goals of the planning agency.

Using Z_{it} as the dependent variable and the above mentioned independent variables, the regression equation will be as follows:

$$Z_{it}=\alpha_0+\sum_{j=i}^{43}\alpha_{1tj}X_{itj}+\epsilon_{it}$$

The estimated value, Z'_{it}, will be the estimated probability that the fertility goal will be achieved in the i^{th} district in census year t. Using these estimated probabilities, P'_i logit regression analysis can be used. The logit regression analysis[1] is as follows:

$$\text{Log}_e\left(\frac{P_{it}}{1-P_{it}}\right)=\gamma_0-\sum_{j=1}^{43}\gamma_{itj}X_{itj}-\epsilon_{it}$$

P_{it} is the probability that the goal can be realized in i^{th} district in the census year t. In this case, P_{it} is not usually known in advance. Usually, γ_0 and γ_{itj} are estimated by simulation procedure.

---

[1] Henri Theil, Economics and Information Theory (Amsterdam. North-Holland Publishing Company), 1967.

In as large a model as the one being proposed, however, simulation will be too big a task. If the project budget allows, it can be simulated, otherwise, P_{it}, which is estimated on the basis of the procedure described above, is substituted in the equation. Once P_{it} is known, the left-hand side of the regression becomes a known value and, hence, $\log_e \left(\frac{P_{it}}{1-P_{it}}\right)$ becomes a known value for each set of values, X_{itj}. By estimating the logit regression equation, we can estimate the probability that the fertility goal will be achieved in the i^{th} district the census year t. Such a probability is estimated as follows, after estimating the logit regression :

$$P_i = \frac{e^{\left(\gamma'_0 - \sum_{j=1}^{43} \gamma_{itj} X_{itj}\right)}}{1+e^{\left(\gamma'_0 - \sum_{j=1}^{43} \gamma_{itj} X_{itj}\right)}}$$

Estimation of the probabilities of the type mentioned above should be helpful for policy makers. If the policy maker knows in which districts the chances of achieving fertility targets are greatest, a major portion of available funds allotted for family-planning programs in each state may be allocated to those districts for the most rapid abatement of population growth. With a knowledge of those variables that have the greatest likelihood of helping to achieve fertility goals, greater emphasis may be placed on manipulating such variables, rather than on those that have less effect. Some of the manipulatable variables included in both the aggregate and survey models, as applied to particular communities and families, are : age of woman at marriage, low or high caste (the effect of which may be changed through education), number of movie theaters, number of radios, number of family planning clinics, amount of government expenditures, extent of literacy, cost of education, and proximity to family planning clinics.

If their effect on the fertility rate is found to be significant, these variables may be manipulated as indicated. If high fertility rate is associated with low age at marriage, age of consent to marriage can be increased by legislation. If low caste is associated with a high fertility rate, government efforts to educate women in low-rank castes can be increased, If the number of radios have an impact on reducing the fertility rate, subsidies for owning radios might be established or increased and radio licence fees might be abolished, especially for the poor. If movie theaters also have such an impact, expenditures might be increased for disseminating information through movie theaters, as well as by radio. Also, more family planning clinics might be started so that most villages will be within a reasonable walking distance, or close enough to enable poor people to utilize public transportation.

References

T. P. Schultz, "A Framework for Analysis and its Application to Taiwan's Family Planning Program", Paper presented at an International Symposium on Statistical Problems in Population Research, East-West Center, Honolulu, August 2-6, 1971. (to be published in 'Statistical Problems in Population Research,' N. Keyfitz, ed.)

G. B. Simmons, 'The Indian Investment in Family Planning (New York : Population Council, 1971).

Henri Theil, 'Economics and Information Theory' (Amsterdam : North-Holland Publishing Company, 1967).

Henri Theil, 'Principles of Econometrics' (New York : John Wiley & Sons, Inc., 1971).

United Nations, 'Variables and Questionnaire for Comparative Fertility Surveys' (New York : 1970).

R. Weintraub, "The Birthrate and Economic Development, An Empirical Study", 'Econometrica', 40, No. 41 (October, 1962).

World Bank, "Population Planning", Sector Working Paper, March, 1972.

Population Council, 'Findings from Family Planning Research, Reports on Population/Family Planning, October 1972.

I. Adelman and C. T. Morris, "A Quantitative Study of Social and Political Determinants of Fertility", 'Economic Development and Cultural Change,' Vol. XIV, Number 2 (January, 1966).

I. Aldelman, "An Econometric Analysis of Population Growth", 'The American Economic Review', 52, No. 3 (1963).

Y. Becker, "An Economic Analysis of Fertility", 'Demographic and Economic Change in Developed Countries' (National Bureau of Economic Researh, 1960).

Bureau of the Census, United States Department of Commerce, "Fertility : Levels and Variations", Chapter VIII, 'People of the United States in the 20th Century' (Washington, GPO).

C. F. Christ, 'Econometric Models and Methods' (New York : John Wiley & Sons, Inc., 1966).

Mary Fish and A. A. Thompson, "The Determinants of Fertility : A Theoretical Forecasting Model", 'Behavioral Science, 15 (1970).

S. Friedlander and M. Silver, "A Quantitative Study of the Determinants of Fertility Behavior", 'Demography', 4, No. 1 (1967).

A. S. Goldberger, 'Econometric Theory' (New York : John Wiley & Sons, Inc., 1964).

Benjamin Higgins, 'Economic Development', Revised Edition, (New York : W. W. Norton & Company, Inc., 1968).

Harvey Leibenstein, 'Economic Backwardness and Economic Growth' (New York : John Wiley & Sons, Inc., 1957).

Lester B. Pearson, 'Partners in Development' (New York : Praeger Publishers, 1969).

Llad Phillips, Harold L. Votey, Jr., and Donold E. Maxwell, "A Synthesis of the Economic and Demographic Models of Fertility : An Econometric Test", 'The Review of Economics and Statistics,' 3 (1969), pp. 298-308.

T. P. Schultz, 'Effectiveness of Family Planning in Taiwan : A Methodology for Program Evaluation' (Santa Monica; Rand Corporation, 1969).

Capital Formation in Meiji Japan : A Case for the Bond Commutation—II

Tomotaka Ishimine*

In assessing the role of the government in the Meiji Japan, it is necessary to recall that many leaders of the battles for the Meiji Restoratien, as well as Samurai, subsequentely entered into the government. Many of them were passionate, nationalistic, intelligent, and selfless in their own right. They were dedicated to their duty and to their country, but above all they were realists. Japan was humiliated, in their eyes, by being forced open but when they realized that the Joi part of the Sonno Joi (Revere the Emperor, Expell the Barbarians) was unrealistic and anachronistic, they changed their direction full course without abandoning the Sonno part.

As former warriors who understood the power and accompanying privileges and prestige, they realized the power behind the western states was military might and the industries that sustained it. The Fukoku Kyohei (Enrich the Nation, Strengthen the Army) became a new slogan and the Shokusan Kogyo (Encourage Industries) became a new policy.

Model Factories

The government filled in the vacuum created by the absence of modern industries, lack of capital, and entrepreneurs in the Meiji Japan. The government had already overtaken factories operated by the feudal clans, such as the iron foundaries in Yokosuka and Nagasaki ; shipyards in Ishikawajima and Kanazawa ; filatures in Sakai and other places ; copper mines in Ashio, coal mines in Miike, silver mines in Lado, and so forth.

In addition, the government also set up its own "model factories" : Akaba Machinery (1872) ; Tomioka Filature (1873) ; Akaba Filature (1874) ; Fukagawa Cement, Shinmachi Spinning (1876) : Shinagawa Glass, Senju Woolen (1877) ; Shinagawa Block (1878) ;

---

* Deparment of Economics California State University, Long Beach, USA,

Aichi Spinning, Hiroshima Spinning, Asakusa Karamae Flour Mill (1180). As the names on the list multiplied, the fiscal burden for setting up and operating these mills and factories became quite clear, especially in the light of the fact that some of them operated constantly in the red. The government began to sell most of the factories, with the exception of industries of military significance such as railways, telephone and telegraph, and steel mills, at exceedingly low prices to private entrepreneurs (Kojo Haraisage).

It is rather a well known fact that many of them went to wealthy merchants providing the impetus for the latter to become Zaibatsu (Japanese style conglomerates). Some of them went to Samurai with enough capital and entrepreneurial talent and who, subsequently made a fortune by expanding their activities on the basis of the transfer.

Construction and maintenance of these model factories required an enormous amount of fiscal expenditure. Some of the funds came partly from savings resulting from termination of the pensions to the former rulers, and partly came from reduced administrative expenditures for tax collection and transaction costs of converting rice into money as the result of the tax reform. However, the savings resulting from these sources were far smaller than the expenditures required to carry out the policies of the Shokusan Kogyo.

Therefore, although some investment capital came from this reconversion of pension bonds into investment funds in the private sector, as pointed out earlier, most investment capital came from inflationary financing in the public sector. As for this inflationary financing, the government issued inconvertible government notes by the net amount of 120 million yen over a decade around the period of the Seinan Rebellion, or 12 million yen on the annual average. This amounts to approximately one fifth of the annual land tax revenue at that time.

It is worth mentioning that during this crucial period of three decades in the Meiji until the Sino-Japanese War of 1894, the government resorted to foreign loans only twice, all in the first ten years of the Meiji before a solid tax base was established through land tax reform. In 1871, bonds were floated in London in the amount of one million pounds (4.9 million yen) at the interest of 9% to finance the railway construction between Tokyo and Yokohama, Osaka and Kobe, and Kyoto and Osaka. And, in 1874, another foreign loan was obtained by floating bonds in London, for the amount of 2.4 millon pounds (11.7 million yen) to finance the cash part of the commutation of the Samurai pensions. The government was fully aware that possible default on foreign loans might provide a pretext for foreign intervention as had occurred in Egypt and Turkey in earlier years.

Help to Private Firms

Not only did the government construct and operate its own model factories, it helped the private sector to start a number of firms in banking, trading, transportation and manufacturing. The help came in various forms : transfer of the government's model factory to the private sector, government participation through stock purchase, low cost financing, provision for government advice, subsidies, and government purchases of the products.

Thus, it was the government-initiated foreign exchange bank and trading company (Kawase Kaisha and Tsusho Kaisha respectively), established in 1869, that gave Japan's modern banking institutions and famed trading campanies their initial impetus. Although both Kawase Kaisha and Tsusho Kaisha were dissolved within several years, they can be duly regarded as the forerunners of the modern business organization in Japan. After dissolution of the above companies, banks and trading companies solely based on private initiatives began to emerge.

The protective policies of the government were especially apparent in transportation. Though the government had decided to nationalize the main railway lines, the local lines were left to the private sector. When the first private railway company (Nippon Tetsudo Kaisha) was established in 1882, mainly with the capital provided by the Kazoku, to construct a railway between Tokyo and Aomori, the government helped the company to acquire lands, exempted national tax on them, and guaranteed net revenue when the profit was below 8%.

The protection accorded by the government was also apparent in ocean transportation. The protection of the Mitsubishi Kaisha also served as a good example of the fact that the policy governing protection of private firms was not always determined by an efficiency criterion but by the firm's loyalty to the government. In other words, there was a degree of favoritism in the dispensation of protection. For instance, after the Mitsubishi Kaisha helped the government in logistics at the time of the Saga Rebellion and the

Taiwan Expedition in 1874, the government gave to this company thirteen steamships free of charge, provided subsidy for the company's operation of 250 thousand yen over fifteen years, and promised a subsidy for crew training of 15 thousand yen per trainee. The government also sold eighteen ships it had purchased from the defunct Yubin Jokisen Kaisha to the Mitsubishi Kaisha at extremely favorable terms of 15 years at 3% interest rate.

A similar protection of private companies by the government was repeated many times in the silk filature, cotton spinning, paper mills, shipbuilding and others. The initiation of many key industries and protection of these industries by the government explains the fact that neither government nor business in Japan regards each other as adversaries. The affinity between them can readily be understood if one recalls that the leaders in government and business came, in many cases, from the same class origin, the Samurai. When the leaders in business were merchants, merchants had strong influences in the government through their financial contributions : war financing, assumption of bonds, and contributions to political parties. In many cases the government favored business through various assistances which have already been mentioned.

This affinity between government and business continues to this date in various forms (Yanaga, 1958 ; Kaplan, 1974). Many senior personnel of the government are employed by business firms (Amakudari) after they retire from their government posts at the mandatory retirement age of 55. They work as liaisons between the business and the government, which perpetuates this affinity. This same affinity is the reason why economic guideline policies and so-called government indicative planning have worked in Japan. However, the government does have many leverages, such as the financing policy of the Bank of Japan, in case the business does not conform to the government's intentions.

Conclusion

It is said that there are vicious circles of low income-saving-investment-income among less developed countries. According to this thesis, the chain of the circle must be broken. In case of the Meiji Japan, the chain was broken with the deliberate policies of the government to build capital formation. The land tax reform provided the government with the capital to build "model factories," and the commutation of pensions into bonds provided private capital. The outlet for private and public capital was provided by the policy of the Shokusan Kogyo. It is interesting to note that this policy is what can be described today as the "balanced growth approach". The Fukuku Kyohei was the slogan which mobilized the energy of the entire people, which resembled the energy brought forth by a war economy.

After examination of some of the factors that contributed to the early growth of Japan, it is necessary to discern the element that can be usefully applied to some developing countries of today.

It is granted that economic development requires a basic restructuring of the traditional society. It is also undeniable that the restructuring often comes after extraordinary political upheavals. When the newly emerged force takes over the political power, it is usually in the vindicative mood against the former ruler. The properties of former rulers are often confiscated without compensation and as a result they are often alienated from the new order.

It is interesting to observe that in the case of Japan, the new government did not confiscate the "properties" and incomes of the former rulers outright; they were compensated—compensated in an ingenious way through commutation of pensions into bonds. Besides the fact that, politically, the measure prevented the former rulers from complete alienation toward the new order, it had several favorable effects on the early growth of Japan. First, the compensation through bonds prevented a further inflationary impact in the early Meiji period. Secondly, some of these pension bonds were later converted into investment capital. A no less important matter is that through this measure, the former "parasitic" rulers were converted into productive members of the society. It is noteworthy that China has successfully converted some of the former bourgeois entrepreneurs into productive members of the new order as long as they showed "repentance" of the past "sin".

Another interesting point that can be derived from the Japanese experiences, aside from the often-cited important factors such as education and domestic savings, is that Japan's case was what may be today called a case of the "balanced growth" or of "big push", i.e., all around investment efforts as opposed to peace-meal, gradual and "unbalanced growth." To this goal of the Shokusan Kogyo, Japan mobilized the bursting energy of nationalism for a course of industrialization. In this sense a successful economic development may require the energy that is comparable to that under a war economy.

At least such was the case for Japan. This balanced growth approach of the early period is in a remarkable contrast with the unbalanced growth approach (Keisha Seisan Hoshiki) that was adopted in Japan in the period immediately after World War II.

However, one should not deduce too much of generalization from the Japanese experience. After all the Meiji Restoration, the commutation of pensions and the Shokusan Kogyo policies all occurred in peculiar circumstances of Meiji Japan. No country's political and economic experiences are alike. One mistaken "lesson" that can be learned is to shun away foreign capital. There were good reasons that Japan, toward the end of the 19th century, avoided foreign loans at all cost. However, this does not necessarily lead to a conclusion that all developing countries follow the same path, for the political and economic realities of the world of today are vastly different from that of the late 19th century.

Although there can be many other useful lessons from the Japanese experience, the above three deductions, i.e., the role of bond capital, the balanced growth approach and the non-role of foreign capital and its proper lesson, are important enough but somewhat unorthodox. Certainly many hypotheses can be formulated around the above deductions and can be more rigorously tested against hard data in future.

References

Beida, K., 'The Structure and Operation of the Japanese Economy', Ch. 1. Sidney, 1970.

Hagen, Everett E., 'The Economics of Development', Ch. 6. Homewood, 1975.

Inoue, Kiyoshi., 'Nippon No Rekishi : Meiji Ishin'. [History of Japan : The Meiji Restoration]. Vol. 20, pp. 224-251, Tokyo, 1971.

Irokawa, Taikichi., Nippon No Rekishi : Kindai Kokka No Supatsu [Hostory of Jappan : Emergence of a Modern State]. Vol. 21, pp. 320-352. Tokyo, 1971.

Kaplan, Eugene J., 'Japan : The Government-Business Relationship', Ch. 3. Washington, D. C., 1972.

Kelly, Allen C. and Williamson, Jefferey G., 'Lesson From Japanese Development : An Analytical Economic History', Chicago, 1974.

"Writing History Backward: Meiji Japan Revisited," 'Journal of Economic History', December, 1971, 31(4).

Kelly, Allen C., Williamson, J. G. and
Cheetham, R. J., 'Dualistic Economic Development: Theory and History', Chicago, 1972.

Lockwood, William W., 'The Economic Development of Japan', Ch. I. Princeton, 1968.

Maddison, Angus, 'Economic Growth in Japan and the USSR', Part I, Chs. 1 and 2, New York, 1969.

Minami, Rhoshin and Ono, A., "Wages and Employment in Dualistic Devolopment: Japanese Experience," 'Discussion Paper. No. 224', Economic Growth Center, Yale University, March, 1975.

Norman, E. H., 'Japan's Emergence as a Modern State', Chs. 4 and 5, New York, 1940.

Shinohara Miyohei, 'Structural Changes in Japan's Economic Development', Ch. 8. Tokyo, 1970,

Taira, Koji, "Education and Literacy in Meiji Japan: An Interpretation," 'Expl. in Econ. Hist, Vol. 8, No. 4. Summer, 1971.

Yamamura, Kozo, 'Economic Policy in Postwar Japan', Ch. 7. Berkeley, 1967.

"The Increasing Poverty of the Samurai in Tokugawa Japan, 1600-1868," 'Journal of Economic History', Vol. 31, No. 2, June 1971.

"Tale of Japanese Technological Diffusion in the Meiji Period": Comment, 'Journal of Economic History', March, 1274 34(1).

"Toward a Reexamination of Economic History of Tokugawa Japan, 1600-1867," 'Journal of Economic History', September, 1973, 33(3).

Yanaga, Chitoshi, 'Big Business in Japanese Politics', Chs. 1 and 3. New Haven, 1968.

(Concluded)

Land Use in Agriculture

(AN EMPIRICAL VERIFICATION)

G. P. Mishra*

"Studies in the Economics of Farm Management" conducted in different States of India at different periods of time show the existence of an inverse relationship between the intensity of cropping and farm size in Indian agriculture. The All India Report on Agricultural Census, 1970-71 also indicates successive declines in the intensity of cropping from 130.18 to 121.14, from 121.14 to 118.24 to 110.28 with changes in the farm size from the marginal to the small, from the small to the medium, and from the medium to the large respectively.[1] That is why the large farms are alleged to use land less intensively.

Why the large farms use land less intensively or have lower intensity of cropping, requires more and more analytical explanation with facts and figures. The most obvious explanation to the phenomenon given on the basis of aggregative secondary data-based studies is the availability of water for irrigation to the farmers for crop cultivation. The computation of data on the extent of irrigation facilities at the interfarm level from the Farm Management Surveys or from the All India Agricultural Census bears a witness to this fact.[2] However, with given irrigation facilities to all groups of farmers, P. H. Prasad (1975) observes that the large farmers do not care to make use of irrigation facilities beyond one season, whereas the marginal and small farmers do. Ranji Sau (1976) argues on the basis of All India Rural Household Survey made by the NCAER that the multiplicity of modalities of profit-making (such as surplus reaping from the application of wage labour-based technique of production, money lending to small farmers and agricultural labourers at usurious interest rates, engaging in trade in foodgrains and in other agricultural

---

* Fellow in Economics, Rural Economics Unit, Institute for Social and Economic Change, Bangalore,

** This paper is based on the study carried out during 1975-76 at the Institute. The author is thankful to Mr Vivekananda and Y. J. Jayaram for their participation in field investigations and their statistical assistance. However, he alone is responsible for errors.

4

products, and selling industrial goods from the town to the local market) make them cultivate land only for a brief period of time; as a result of which their land remains fallow at the other times of the year. Other reasons like the substitution of more valued crops for less valued crops, the cultivation of more area under long duration crops, etc., are also put forth for the existence of low cropping intensity for large farms. Whatever the reasons may be for the less intensive use of land by the large farmers, it has policy implications of a great social and economic value in the rural economy of the country having a high degree of concentration of land in the large farm sector. 50 per cent of the gross cropped area of the country is operated in the large farm sector; while the marginal-cum-small farm sector constituting 78 per cent of the total number of operational holdings of the country cultivates only 34 per cent of that gross cropped area (All India Agricultural Census, 1970-71). Assuming so, the less intensive use of land in the large farm sector will hold back the growth of India's land endowment and, as a consequence there will be adverse effects on agicultural production and distribution.

It is, therefore, essential to examine the following issues concerning the utilisation of land in Indian agriculture:

(1) Do the large farms deliberately use land less intensively ?

(2) If not, why the intensity of land use (or cropping intensity) is relatively low for the large farms as compared with the marginal and small farmers ?

With the above background, this paper makes an attempt to examine the issue of land use at inter-farm level.

I. Data and Methodology

The data used here are based on field investigations conducted during 1975-76 in three taluks of Bellary district in Karnataka: (1) Bellary, (2) Hospet, and (3) Siruguppa. In all ten villages with canal irrigation were investigated and the total number of farm households investigated was 92.

These villages were selected on a random basis but the characteristics of canal irrigation were taken into account for their random selection. They are finally clustered in three groups on the basis of the characteristics of canal irrigation prevailing there: villages with DCW canal irrigation, villages with wet canal irrigation, and villages with perennial irrigation. These three groups of the selected villages are called as DCW, wet, and perennial villages in this paper.

The farm households were investigated in the above villages on the basis of three criteria : (i) the characteristics of canal irrigation, (ii) classification of farm households in five groups operating land holding of less than 2.5 acres, from 2.5 to 5.0 acres, from 5.0 to 10.0 acres, from 10.0 no 20.0 acres, and more than 20 acres ; and (iii) investigation of 6 per cent of the total number of households belonging to each farm size group.

In this paper, five groups of farm households are reduced to two main groups—small and large—for the sake of comparative purposes. A small farm household is one which operates up to 5.0 acres of land holding and a large farm household is referred to one that operates land holding of 1.00 acres and above. In our enquiry no definitive differences were found between 'household' and 'holding'. Moreover, the terms 'farmer' and 'farm household' aro synonymously used in this paper.

II. Characteristics of Canal Irrigation

Bellary district has a system of 'patch' irrigation, as the zonal patterns of the Tung Bhadra Project (TBP) localised area show. That system of canal irrigation in the TBP ayacut area of the district is geographically tied with those zonal patterns which demarcate the localised area as dry-cum-wet (DCW), wet, and perennial. As a result, the cropping patterns of agriculture in the district are broadly determined as Table-1 shows.

Table-1 indicates that in the DCW and wet villages of the TBP command area, there is restriction on the cultivation of crops by farmers. But in the villages with perennial irrigation, there is no restriction on choice of crop cultivation. However, sugarcane and double cropping of paddy are very common cropping practices in the perennial area of the TBP ayacut.

The patchy and undulating topography of land being a geographical constraint on irrigating all lands simultaneously has, in fact, led to the demarcation of irrigable land for the cultivation of different crops in the TBP command area and hence the characteristics of canal irrigation. The existence of peculiar soil conditions also leaves no other alternatives to adopt other than that system of patch irrigation for supplying water in accordance with the types of soils which are found on their respective patches of land suitable for the cultivation of specific crops.

The agricultural terrain of the district is still, by and large, dry with dependence on scanty and fluctuating rainfall ; as not more than 15 per cent of its area is irrigated.

Table 1

Characteristics of Canal Irrigation and Cropping Patterns in TBP Command Area

Type of Localised Area	Cropping Patterns	Season	Water from the Right Bank Canal
1. DCW	Jowar, Bajra, Cotton Navane Dry Crops	Kharif	High Level Canal
	Wheat	Summer	Low Level Canal
2. Wet	Paddy	Kharif	Low Level Canal
3. Perennial	Paddy	Kharif and Summer	
	Sugarcane and any other Crops	Long duration crop Any Season	Low Level Canal

Notes :

1. Water is released in the DCW area from the Right Bank High Level Canal during Kharif season from June 15 to December 15 in a year. In the some area, water is supplied from the Low Level Canal of the Right Bank for irrigating wheat during the summer.
2. In the wet area, water is released from the Right Bank Low Level Canal for irrigating paddy during the Kharif season.
3. In the perenniel area, water is supplied from the Right Bank Low Level Canal from January to November in a year.

III. Extent of Irrigation

The extent of irrigation as a percentage of total area irrigated is not the same in the sample villages having three different characteristics of canal irrigation. Table 2 shows that 44.34 per cent

Table 2

Extent of Irrigation

(As a Percentage of Total Area)

Farm Group	DCW Villages	Wet Villages	Perennial Villages	All Villages
1. Small	88.18	100.00	82.02	84.50
2. Large	34.16	40.99	48.08	41.02
3. All	36.98	42.84	53.27	44.34

1. The smaller the farm size, the larger the irrigated area and so conversely ; and
2. The larger the farm size, the greater the amount of dry land and so conversely.

of the total area of all villages taken together is irrigated. The proportions of irrigated area in the DCW, wet, and perennial villages are 36.98 per cent, 42.84 per cent, and 53.27 per cent respectively.

The inter-farm extent of irrigated area within and across the villages shows that the small farms have more than 82 per cent of their total area irrigated; while the large farms have 48.27 per cent in the perennial village, 40.99 per cent in the wet villages, and 34.16 per cent in the DCW villages. The inter-farm comparison of the extent of irrigated arear yields the results as shown in Table 2.

IV. Land Use and Cropping Intensity

The utilisation of land is supposed to be primarily a function of the supply of water for irrigation and its use in crop cultivation. The system of double or multiple cropping itself depends on the supply of water for irrigation. The use of water for irrigating crops also depends on the types of soils and of crops to be sown there. Given soil conditions, the question of using water for irrigating crops arises when water is available for irrigation. Thus the extent of irrigation facilities matters most in using land for crop cultivation.

Corresponding to the inter-farm extent of irrigated area (as discussed above), the small farmers belonging to all villages (except wet villages) show greater intensity of land use than what the medium and larger farmers indicate. Table 3, shows greater intensity of land use for the small farmers than the medium and large farmers at both levels—across and within the villages.

Within the villages, the small, medium and large farmers have 1.40, 1.29 and 1.23 as the intensity of land use in the DCW villages respectively. Similarly, these farmers have the intensity of land use in the order of 1.55, 1.48 and 1.45 in the perennial villages and of 1.00, 1 02, and 1.02 in the wet villages.

This picture of land use presents the same scene as observed in the context of scondary data-based studies on the pattern of inter-farm land use. Moreover, the inter-farm intensity of land use also confirms the findings based on secondary data-based studies that the inter-farm variations in the intensity of land use within as well as across the villages positively co-exist with the inter-farm variations in the extent of irrigated area.

The inter-farm intensity of land use across the villages indicates that the small farmers belonging to the perennial villages have greater intensity of land use than those belonging to the DCW and wet villages. Similarly, the intensity of land use being 1.48 and 1.29 for the medium farmers belonging to the perennial and DCW villages respectively is greater than the intensity of land use for the same farmers belonging to the wet villages who have only 1.02. The large farmers belonging to the perennial villages have the higher intensity of land use, that is 1.47, but those belonging to the DCW and wet villages have 1.22 and 1.02 respectively.

Thus the above analysis reflects the following:—

(a) the smaller the farm size, the lower the intensity of land use.

(b) the inter-farm intensity of land use across the villages shows greater use of land for all types of farmers in the perennial than in the DCW and wet villages.

(c) the same pattern of land use across the DCW and wet villages indicates greater use of land in the DCW villages than in the wet villages.

The first is self-explanatory as the extent of irrigated area indicates. Table 3 also shows no land remains as current fallow on the small farms. This implies that they manage the utilisation of their land more efficiently than what other categories of the farmers do within the villages. Their greater intensive use of land is on account of the absence of either seepage or water shortage problems.

The intensity of land use for all categories of farmers is higher in the perennial than in the other villages because of the following:

(i) water is available for irrigating fields throughout the year in the former but it is not so in other villages.

(ii) the under utilisation of dry as well as irrigated land in terms of current fallow as percentage of total cultivable land is very small in proportion in the perennial villages than in other two villages.

(iii) the proportion of irrigated area as current fallow is smaller in these villages than in the DCW and wet villages because the problems of water seepage and shortage are much more pronounced in the latter than in the former.

(iv) whatsoever the amount of dry land may be at the disposale of the farmers belonging to the perennial, they cultivate most of their land for producing one crop in a year. But this case is not found in the DCW and wet villages.

As a consequence of the above, the inter-farm intensity of land use is greater for the farmers belonging to the perennial villages than to the wet and DCW villages. Despite higher percentage of under

Table 3

	……DCW Villages……				……Wet Villages……				……Perennial Villages……			
	Small	Medium	Large	All	Small	Medium	Large	All	Small	Medium	Large	All
1 Intensity of Land Use	1.40	1.29	1.22	1.23	1.00	1.02	1.02	1.02	1.55	1.48	1.45	1.27
2 Intensity of Cropping on Irrigated Land	1.47	1.41	1.49	1.30	1.00	1.03	1.04	1.03	1.68	1.61	2.33	2.18
3 Under Utilisation of Land :—												
(a) Dry	Nil	33.37	29.10	29.00	—	8.30	23.90	23.70	Nil	Nil	2.87	2.67
(b) Irrigated	Nil	28.60	12.84	13.18	Nil	Nil	8.00	7.30	Nil	Nil	4.04	3.12
(c) Both Combined	Nil	30.00	22.80	22.30	Nil	1.38	17.00	16.22	Nil	Nil	3.46	2.91

Note : 1. Intensity of Land Use $=\dfrac{\text{Area Sown more than one crop}}{\text{Net Sown Area}}$

2. Intensity of cropping of irrigated land $=\dfrac{\text{Gross Irrigated Cropped Area}}{\text{Net Irrigated Cropped Area}}$

3. Under Utilisation $=\dfrac{\text{Current Fallow}}{\text{Total Cultivable Land}}\times 100$

4. While calculating the intensity of cropping in irrigated land in the perennial villages, one acre of land cultivated under sugarcane is assumed to equal two acres of gross cropped area.

utilisation of land, the inter-farm intensity of land use is higher in the DCW than in the wet villages because water is made available twice in a year to the farmers to cultivate dry crops in the Kharif as well as wheat in the summer ; while the supply of water is available for one crop cultivation in a year in the wet villages. As a result, the amount of gross cropped area in relation to that of net sown area has increased much larger in the DCW villages than what is obtained in the context of wet villages. That is why the intensity of land use depends on the availability of the supply of water to irrigate crops in a year.

Intensity of Cropping on Irrigated Land

The analysis of land use at the inter-farm level, inclusive of dry and irrigated land, may be misleading if the use of irrigated land is not separately taken into account. This case may be more misleading in relation to the large farm sector where the farmers possess more unirrigated than irrigated land.

The inter-farm intensity of irrigated land use within as well as accross the villages as shows in Table 3.1, contradicts the phenomenon that the larger the farm size, the lower the intensity of land use for the large farmers is higher than the medium and small farmers in all the villages. In the DCW villages, the large farmers have 1.49 intensity of cropping which is higher than 1.47 and 1.41 belonging to their small and medium farmers respectively. Similarly in the wet villages, the intensity of cropping is 1.04 for the large farmers and 1.00 and 1·03 are for their small and medium farmers respectively. The range of variations in the intensity of cropping for the large, small, and medium farmers belonging to the perennial villages is much more glaring ; as the farmers are reported to use their land for producing more than two crops in a year than what their small and medium farmers having 1.68 and 1.61 respectively as the intensity of land use are found to produce crops in one year. The large farmers in the perennial villages use their irrigated land more intensively than the small and medium farmers, though they have 3.46 per cent of their irrigated land as current fallow.

The above observations thus reflect the following :—

(a) So far as land with irrigation is concerned, the large farmers do not use land less intensively than small farmers.

(b) The nature of canal irrigation and the availability of water are important, so far as the utilisation of land with irrigation is concerned. This is what the intensity of irrigated land use in the DCW and perennial villages show. In the former, water is supplied twice in a year and in the latter, throughout the year. The wet villages having supply once in a year for cultivating Kharif paddy are reported to have less use of irrigated land for the farmers than those belonging to the perennial and DCW villages.

In spite of the intensity of cropping on irrigated land being high for the large farmers in relation to the small ones in the sample villages, one thing is clear that the large farmers do not use water as efficiently as the small farmers do. .This is what the existence of current fallow irrigated land, shown in Table 3 in terms of percentage of land under utilisation, indicates. The co-occurence of greater use of irrigated land with the under utilisation of some amount of irrigated land for the large farmers seems to be incidental but it is factual in observation.

Why Large Farms do not Utilise Dry Land ?

Lack of facilities for irrigating dry land may be attributed as a reason for its unutilisation by the large farmers. But this causal explanation should also hold true in respect of those small farmers who have also dry land but they cultivate it for producing one crop in a year. Hence the lack of irrigation facilities may be more prima facie than real in character. But ons thing is clear from the foregoing discussion that the nature of irrigation is also an important factor of utilisation of land without irrigation, specially in the context of an area having perennial source of irrigation. That is why the dry land belonging to the large farmers in the perennial villages is less unutilised than the dry land belonging to the DCW and wet villages. To repeat it, the large farmers belonging to the perennial villages cultivate most of their dry land for producing one crop in a year. The large farms operating mostly wage labour-based mode of production are generally rational in behaviour and so the relative profitability of farming of land without irrigation seems to be a plausible cause for concentrating more productive efforts in farming land with irrigation. Table 4, shows that the net return on dry land per acre for the large farms is much lower than that on irrigated land per acre.

The net return on irrigated land and dry land for the large farmers varies from Rs. 58 to Rs. 176 in the DCW villages, from

Rs. 77 to 166 in the wet villages, and from Rs. 2 to Rs. 602 in the perennial villages. The net return on dry land and irrigated land per acre also varies relating to small farmers in the villages.

Table 4
Profitability of Farming

(in Rs.)

Type of Village	All Farms		Large Farms		Small Farms	
	Dry	Irrigated	Dry	Irrigated	Dry	Irrigated
1. DCW	53	70	58	176	5	169
2. Wet	82	176	77	166	—	656
3. Perennial	10	582	2	692	43	399

Note: Profitability of farming (or net return on land) = Gross farm income per acre—gross cost per acre.

The large farmers operating on an average 19.35 acres of land per household in the DCW villages, 27.58 acres of land per household in the perennial villages, can afford to leave a portion of their cultivable dry land uncultivated ; but the small farmers operating on an average 3.02 acres of land per household in the DCW villages, 1.42 acres of land per household in the wet villages, and 1.82 acres of land per household in the perennial villages cannot afford to do so because of the existence of unavaoidable pressures and compulsons on their subsistence requirements.

The unutilisation of a large part of dry land also seems to be deliberate on the part of large farmers because of the fear of land reform policy. This may be substantiated with facts relating to the possibilities of making a portion of their dry land irrigable. The large farmers belonging to the DCW villages have 29 per cent of their land to be developed for making it irrigable. Similarly, these farmers belonging to the wet and perennial villages can develop about 4 per cent and 2 per cent of their dry land for irrigation purposes respectively. The apathy of such farmers towards irrigability of land indicates that they are not bothered about using their dry land making it irrigable. The under utilisation of a part of irrigated area also shows their disinterestedness in making the optimum use of their irrigated land.

Conclusions

The above analysis shows that the large farms have, in fact, lower intensity of land use than the small farms. But this is true in respect of the use of land of both categories taken together. The use of land with irrigation in the large and small farm sectors shows that the large farms do not use land less intensively than the small farms. This is what the intensity of use of irrigated land belonging to them shows.

The intensity of land use—inclusive of dry and irrigated—is lower in the large farm sector than in the small farm sector because of the existence of a large amount of unirrigated land and some current fallow in the former. The large farms do not cultivate their all dry land for producing one corp in a year. As a result, the unutilisation of their dry land is high except in the perennial villages where it is in significant for their large farmers.

The main reason for the unutilisation of dry land in the large farm sector is the relative profitability of farming of land with and without irrigation. The large farmers get enough return from the intensive use of their irrigated land. Moreover, having on an average a large size of operational holding, they can afford to leave a part of their dry land uncultivated. Their disinterestedness to make some portion of dry land irrigable ascertains the fact that they do not use it wholly for producing one crop intentionally. The under utilisation of irrigated land by them shows that there the farmers do not use that land as efficiently as it should be.

1. Please see the table given below

Farm Size and Cropping Intensity

Farm Size Group (in Hectares)	Intensity of Cropping	Gross Irrigated Area as Percentage of Gross Cropped Area	Unirrigated Cropped Area as a Percentage of Gross Cropped Area
1 Marginal (1)	130.18	31.84	68.16
2 Small (3)	121.14	27.38	72.62
3 Medinm (4)	118.28	23.65	76.35
4 Large (5)	110.28	21.17	78.83
5 All	116.37	22.60	77.40

Note: Cropping Intensity=Gross Cropped Area/Net Sown Area X 100.

2. Please see the above table.

If a large amount of dry land is operated by the large farmers and they are not interested in using it wholly for the production of one crop in a year, it will not only adversely affect the growth of agricultural production by holding back the growth of India's land endowment but also income distribution in Indian agriculture. Hence this situation demands ceiling on large land holdings for better land distribution and irrigation facilities for more intensive use of land in Indian agriculture.

References :

1. Institute for Social and Economic Change (Bangalore), 'Canal Irrigation in Bellary District', 1975-76.
2. Ministry of Agriculture and Irrigation (Govt. of India), 'All India Report on Agricultural Census, 1970-71'.
3. Prasad, P.H., 'Limits to Investment Planning' in Ashok Mitra (ed) : 'Economic Theory and Planning', Calcutta, Oxford University Press, 1975.
4. Sau, Ranjit, 'Land Utilisation : A Note', Economic and Political Weekly, September 4, 1976, p. 1476.

INDIAN BUDGET 1977-78

Rupee Comes From		Paise
(1) Excise	...	23
(2) Customs	...	11
(3) Corporation Tax	...	8
(4) Income Tax	...	2
(5) Other Taxes	...	2
(6) Loan Recoveries	...	12
(7) Non Tax Revenue	...	15
(8) Market Loans, Small Savings and Provident Fund	...	11
(9) External Loans	...	6
(10) Other Receipts	...	10
		100

Rupee Goes To		Paise
(1) Plan	...	37
(2) Other Development	...	20
(3) Defence	...	18
(4) Interest Payments	...	10
(5) Statutory and Other Transfers to State and U. T. Govts	...	6
(6) Other Expenditure	...	9
		100

Technology and Agriculture in Bihar—I

Putal Rani*

Bihar is predominantly an agricultural State. More than 80 per cent of the total population take out their livelihood from agriculture. Bihar is the 8th largest State in the Indian Union in terms of area and second largest State (next to U. P.) in terms of population. According to 1971 census the population of Bihar was 56.35 million and accounts for 10.3 per cent of India's total population though it covers only 5.3 per cent of the country's land surface. The proportion of workers in rural population of Bihar is 31.1. Among the total workers in the State 43.33 per cent are cultivators and 38.94 per cent agricultural workers ; it means 82.27 per cent of the total workers in the State are dependent upon agriculture as against 69.62 per cent for India as a whole. The net area shown is about 1,10,64,000 hectares. The average size of the holding is a little over one hectare per farm family.

Bihar agriculture over half a century presented a picture of stagnation but since 1963 it is undergoing some drastic changes.[1] Now the improved technology and extended irrigation facilities have appeared on the score, the farmers are trying to switch over to high yielding and high priced crops by discarding inferior crops with lower yields. "Agricultural technology is the prime mover in increasing productivity and when applied by millions of small farmers will go a long way to change the traditional to a modern agriculture. The basic responsibility for promoting agricultural techniques rests with the State, being the place of implementation."

Technological change in agriculture covers adoption of new techniques which have been developed through research and innovations to bring about an increase in the agricultural production and

---

* Department of Economics, Mahila College, Khagaul, Bihar.

[1] "Techno-Economic Survey of Bihar", National Council of Applied Economic Research, New Delhi 1958. Also Report on J A D P, Vol. 1, Government of India, New Delhi, May, 1969, Page 3.

greater economic returns to the farmers. During the past ten years, Bihar agriculture has experienced a substantial impact of new agricultural technology.[2] By new agricultural technology we mean all forms of new farm inputs, practices and services such as improved seed, use of fertilizers, mechanised machines, tools, better credit facilities, which are helpful in raising the productivity of agriculture.[3]

Importance of Technological Applicance

There are three sets of factors mainly responsible for the low yields : (1) natural factors, (2) economic factors and (3) socio-economic factors. The accumulated effects of these factors have resulted in low crop yields and stagnation in agriculture. During the past 20 years, as many as 12 years were marked by floods and droughts which adversely affected agricultural production. The economic factors responsible for the low yield rates have been the pressure of surplus farm, population, problems of supply of improved seeds, manures fertilizers, implements and lack of adequate and timely credit facilities. The cumulative effect of these have been that during the period between 1952-53 and 1969-70, the growth rate of agricultural production was only 0 7 per cent per annum, i.e. less by ¼th of the all India average of 3 per cent. The production of food grains during 1974-75 was 82.50 lakh tonnes. A massive Rabi Production Programme was launched during 1975-76.

Technological and organisational support were strengthened as a result of which production of foodgrains during 1975-76 went up to 91.75 lakh tonnes. Thus, the increase in production of foodgrains during 1975-75 was of the order of 9.25 lakh tonnes over 1974-75. The target of production of foodgrains during 1976-77 was 100 lakh tonnes, given normal weather. Even during the post Green-Revolution period production in Bihar actually declined by 2.1 percent per annum as against an increase of 14 percent for the country as a whole. Thus, the deficiency in foodgrains prevails in Bihar, which can only be increased by applying technology in agriculture, decreasing the effects of even natural factors.

Agriculture and allied sectors occupies a major share in the Net National Product also. The State income from agriculture at current prices was 43.12 percent in 1960-61 (the base year) which increased in 1965-66 to 45.42 percent, in 1969-70, to 38.44 percent, and in 1970-71, to 39.84 percent. The application of technology is important for increasing the agricultural production to contribute more and more in N.N.P.

---

[2] "Techno Economic Survey of Bihar"—National Council of Applied Economic Research, New Delhi, 1958, p. 9.

[3] Rao, C. H. Hanumantha—"Technological Change and Distribution of Grains in Indian Agriculture".

Another important claim for application of technology in agriculture crops up from the fact that 90 percent of the total cropped area of the State is utilised for the production of food crops and the remaining 10 percent is devoted to non food crops (against 74 percent and 26 percent respectively for India). Bihar contributed only about 8 percent of the total food grains to the country as against 18 percent of U.P. and 10 percent of Madhya Pradesh. If new strategy of agriculture is applied, Bihar may feed the whole country.

The need of modernising Bihar agriculture can be seen from the following table giving the production and average yield of principal crops in Bihar which are found to be much lower in comparison with the all India level.

Table I

Production and Average Yield of Principal Crops in Bihar

Sl. No.	Name of Crops	Area in 1,000 hect. 70-71	Production in 1,000 M/T 70-71	Average Yield in kg.	
				Bihar	India
1.	Rice	5,334	39,87	747	1,123
2.	Wheat	11,57	10,25	886	1,307
3.	Barley	2,99	1,93	645	1,090
4.	Gram	2,64	1,71	648	6,63

Source : Bihar Agricultural Census Report, 1971, Patna, Page-56.

Thus, it is clear from the above table that average production in kg. of principal crops in Bihar is much lower than All India level. The average yield can be increased through the adoption of new technology as practised in Punjab and Haryana.

For use of improved agricultural practices, as far back as 1903, through the generosity of an American-Philanthropist, Henry Philip of Chicago, the Agricultural Research Institure was established at Pusa in Darbhanga District. But unfortunately after earthquake in 1934, it was shifted to Delhi. The farmers in Bihar generally carry on agricultural operations in age-old manner and the State lags far behind in the adoption of modern farm techniques. The following table will give some indication of the degree of mechnization of agriculture in the State compared to All-India and per capita consumption of electricity for agricultural and irrigated purposes :—

The above table indicates lower level of machanisation of agriculture in the State.

Table II

Use of Modern Techniques in Agriculture in Bihar and India

Items	Bihar	India
1. Per 1,000 hect. of net cropped area (1969):—		
(a) Power operated pumps (electrified)	12.35	12.35
(b) Tractors	0.29	0.45
2. Per capita consumption of electricity in Kwh. for agricultural and irrigational purposes (1970-71)	1.24	8.27

Source : Report on Agricultural Census, Bihar, Patna, 1971, P. 58.

There are four aspects of modernising Bihar agriculture :—
1. Use of improved seeds. 2. Use of fertilizers and chemicals.
3. Use of machanised implements. 4. Credit facilities.

The Seed Act came into force in Bihar in 1966 when the economic importance of using quality seeds, with higher genetic and physical purity, good germination and vigour free from admixture and other crops seeds and free from diseases was well recognised. The State Government intended to launch its own seed certification programme from the Fifth-Five-Year Plan onwards. 27,822 tonnes of improved seeds were distributed between 1956-57 and 1959-60 which increased to 59,456 tonnes between 1968-69 and 1970-71. In Bihar there are 431 Seed Multiplication Farms and 30 subdivisional, and 13 District Farms for the production and distribution of improved seeds to the farmers. These seeds were also exempted from sales tax and market cess. The response has been very encouraging. Till December, 31st, 1976, the quantity of certified wheat seeds sold to farmers was 1.60 lakh quintals. The comparative figures of three years are as follows :—

Table III

Distribution of Wheat Seed in Bihar During 1974-1977.

Years	Wheet Seeds (In quintals)
1974-75	39,419
1975-76	1,18,348
1976-77	1,60,000

Source : 25 Point Socio-Economic Programme of Bihar Govt, Jan., 1977.

The introduction during 1966-57 of the high yielding varieties of dwarf paddy and wheat as well as hybrid maize which respond to heavy doses of fertilizer have become the most important strategy for the campaign for self-sufficiency in food and has brought a major breakthrough in agricultural production. The comparative figures of area under H.Y.V. paddy during the last three years are as follows :—

TABLE—IV

Area under H.Y.V. (Paddy)

Year		Paddy (In lakh hectares)
1974-74	……	6.96
1975-76	……	7.68
1977-77	……	9.98

Thus, the area under H.Y.V. paddy in 1975-76 increased by 0.72 lakh hectares over the previous year. This year, the increase has been by 20.30 lakh hectares over the last year. Thus, there has been an increase of 24 percent in the area under H.Y.V. this year. The following are the comparative figures of area under H.Y.V. wheat of improved varieties :—

TABLE—V

Area under H.Y.V. and improved varieties wheat

In lakh hectares

Year	H. Y. V.	Others	Total
1974-75	8.71	6.07	14.78
1975-76	12.29	6.86	18.15
1976-77	19.64	1.86	21.50 (Target)

The table shows that the target of H.Y.V. wheat this year is 19.64 lakh hectares as against 12.24 lakh hectares of the preceding year. Yet, the area under H. Y. V. as percentage to the total area under each crop is less in Bihar compare to all India.

TABLE—VI

Percentage of area under H. Y. V. to total area under crop

Items	Bihar	India
Paddy	6.02	11.5
Wheat	38.08	24.1
Maize	6.79	7.7

---

* Source :—25 Point Socio Economic Programme in Bihar.

* Source :—Report on Agricultural Census, Bihar, Patna 1971, Page-55.

* Source :—25 Point Economic Programme.

The table clearly shows that the area under H. Y. V. as percentage to the total area cropped in case of paddy and maize is lower in Bihar as compared to that of all India, but is higher in case of wheat.

So far as fertilizer is concerned, the consumption of fertilizer is also lower in Bihar as compared to that of U. P and all India. In 1964-65 the consumption of fertilizer in Bihar was 75 kgs. per hectare which increased to 9.5 kgs. per in 1970-71 but was still lower to 20 kgs per hectare in U. P. and 14.5 kgs. for all India. Thus low consumption of fertilizers has remained one of the handicaps for increase in agricultural production in the State. The backwardness of the State in the matter of consumption of fertilizer could be seen also from the slow pace of increase in such consumption during the plan period. The consumption of fertilizers was 35,000 tonnes during the First-Five-Year Plan, 65,000 tonnes during the Second Five Year Plan and 1.68 lakh tonnes in Third-Five Year plan. In Fourth Five-Year Plan consumption increased to 5.92 lakhs tonnes as against the target of 3.25 lakhs. BISCOMAN, FCI and a number of other agencies are now dealing in fertilizers in the State. The State Government, this year, decided to open at least one sale depot (wholesale-cum-ratail outlet) of BISCOMAN in each and every Block to ensure easy and timely availability of fertilizers to farmers. During 1974-77 the consumption of fertilizers in Kharif has been low even though the cropped area is the highest during the season. However the consumption has gone up in Rabi.

TABLE—VII

The Comparative Figures of Consumption of Fertilizers in Kharif and Rabi

Year	Fertilizers consumption in Kharif (Tonnes)	Fertilizers consumption in Rabi (Tonnes)
1974-75	45,254	71,559
1975-76	45,960	97,124
1976-77 (Upto Dec. '76)	32,779	1,07,900
1976-77 (Target)	....	1,22,000

Thus the figures show that consumption of fertilizers in Bihar in Kharif is lower as compared to Rabi. At the same time the figures also show that consumption of fertilizers in Rabi has increased tremendously from 1975-76 to 1976-77. Use of machanised implements is an important factor, as a part of technoligical application in agriculture in

Bihar, to bring a total revolution to increase the agricultural production. The use of tractors as well as disel and electric operated tubewells are becoming increasingly popular in the State. However for ploughing, harrowing, brewing, seed drilling, harvesting and threshing operations indigenous implements and tools are used in the major portion of Bihar. Total number of tractors sold in Bihar during recent years was very poor.

TABLE—VIII

The Number of Tractors Sold During 1967-73 in Bihar

Year	Total Number of Tractors
1967-68	148
1968-99	410
1969-70	897
1970-71	582
1971-72	674
1972-73	217
	Total—2,928

Source :—Report of Agricultural Census, 1971, Bihar, Patna, Page 60.

The above figures show that the sale of tractors in Bihar increased from 148 ('67-68) to 410 ('68-69). Tremendous increase was marked in (1969-70) when 897 tractors were sold. But in 1970-71 and 1972-73 sale of tractors decreased to 512 and 217 respectively.

Bihar has had a late start in Rural Electrification Programme. The per capita investment of power in Bihar till March, 1969 was only Rs. 29 as compared to Rs. 91 in Punjab, Rs. 93 in Hariyana and Rs. 61 in Maharastra. In Bihar, out of total number of 67,665 villages 8,428 villages had been electrified up to March 1972 which increased to 12,379 by 1973-74. Similarly, 73,382 pumps had been electrified up-till March, 1972. Anticipated progress by 1973-74 was 1,33,922.

Application of technology in agriculture in Bihar is dependent upon credit facilities. It has been estimated that rural indebtedness has reached the figure of Rs. 30 crores during 1969-70. Commercial and cooperative banks play an important role in providing credit facilities. The comparative figures of distribution of credit from all sources during last three years are as follows :—

TABLE—IX

The Distribution of Credit in Bihar During 1974-76

Rupees in crores

Year	Supplementary Line Credit (Agriculture)	Cooperative Credit	Total
1974-75	10.25	12.99	23.34
1975-76	19.00	18.00	37.00
1976-77 (upto Dec. 1976)	18.28	25.00	43.28
1976-77 (Target)	26.00	32.00	58 00

Source :—25 Point Socio Economic Programme.

The above figures show that total credit advanced to farmers, increased between 1974-75 and December 1976 from Rs. 23.24 crores to Rs. 43.28 crores.

As the adoption of new technology in agriculture involves larger size of investment the risk factor becomes important in deciding about the adoption of such new technology in agriculture. The risk factor in the application of new technology in agriculture arises out of changing input and output prices on the one hand and the climate and Government policies on the other. The farmers of Bihar are much aware to adopt new technological strategy but are handicapped only due to risk.

The limitations of the technological change in agriculture in Bihar come from the factors such as old tradition,lack of knowledge of handling and maintenance of implement, lack of training facilities for the farmers, size and distribution of land holdings, etc.

The ultimate objective of these technological applicances in agriculture is the level of production and farmers' income for improving the economic resources of village and thus providing a sound agricultural base to accelerate the process of overall economic development and social uplift all over the State and the country.

Taking into consideration the technological, organizational support available in the State and the results of the various programme initiated in the last few years, the target of foodgrains production during 1977-78 has been kept at 105 lakh tonnes. The above target has been fixed in consultation with the State Government of Bihar and the Planning Commission and the Ministry of Agriculture, Government of India.

The above analysis of the factors, helpful in bringing about technological break-through in agriculture in Bihar, shows that although there has been some progress in this direction in the past few years, there is much to be done for bringing the State's agricultural development at par with all India average.

Green Revolution and the Inter District Variations in Agricultural Wages in Punjab (1957-73)

Vishwa Mittar* and J.R. Gupta*

Many attempts have been made to study the trend in money and real wage rates of agricultural labourers in Punjab and other States. Some studies have also tried to examine the variations in wage rates at the inter-state level and even at the intra-state level particularly with reference to 3 or 4 broad regions in a State. But few studies have been conducted to examine the trend in the inter-district variations particularly with reference to the variations in the growth of wages before and after the Green Revolution. As this analysis has some important policy implications for the selection and location of employment intensive rural projects especially designed for rural workers, the present study is a modest attempt to examine these aspects. Specific objectives of the study are :

(i) to examine the trend in inter-district variations in the wage rates of agricultural labourers for the different agricultural operations;

(ii) to study the growth of agricultural wages in the different districts of Punjab before and after the Green Revolution ; and

(iii) to examine the inter-district trend in the real agricultural wages in Punjab.

Method of Research and Source of Material

For the study, secondary data on money wage rates for agricultural labourers (men only) were collected from various Statistical Abstracts of Punjab.

Inter-district wage rate variations were examined with respect to different crop operations because this suited the availability of data and was to throw more light on the inter-district wage rate variations than the one with a single representative average figure only. For the calculations of compound growth rates, however, the median wage rates amongst the different crop operations were determined as the most representative and

---

*Centre for Research in Economic Change, Punjab University, Department of Economics, Patiala, Punjab.

appropriate wage rate for the agricultural labouers. Although arithmetic mean was also tried but this was ultimately abondoned because this showed erroneous results due to the uniform weights attached to different operations. The compound growth rates were worked out by fitting an exponential function $Y = ABH$, where $B = 1 + r$ and r is the compound growth rate (C.G.R.). These growth rates were further tested for their being significantly different from zero. To study the differential impact of the Green Revoluton, these growth rates were calculated for the period 1957-66 and 1967-73 separately. The selection of the whole period under study in two strata was done after a thorough study of the trends in the variability coefficients which showed quite a distinct trend in those two sets of period.

To calculate the real wage rates, the money wage rates were deflated by the cost of living indices for agricultural labourers in Punjab.

Results and Discussion

Depending upon the uneven pace of agricultural devlopment, the agricultural wage rates are liable to differ from region to region. Even before the advent of the Green Revolution, these wage rates were likely to vary over the different regions. How far Green Revolution has slackened or accentuated the pace of these inter-regional variations in agricultural wage rates, is the prime concern of this part of study.

It shows that the inter-district variations from the mean wage rate were uneven before 1966, but after 1966, barring the year 1968, they registered a constant downward trend up to 1972 when the inter-district variability coefficient in agricultural wage rates had declined to only 7.84 per cent compared with 28.19 per cent in 1966. Almost a similar trend was observed in respect of agricultural wage rates for different operations. For example the inter-district variability coefficient for ploughing was 4.12 per cent in 1968 and 8.69 per cent in 1972; for sowing 28.06 per cent in 1968 and 7.13 per cent in 1972; for weeding 23.17 per cent in 1968 and 9.07 per cent in 1972; for harvesting 31.12 per cent in 1968 and 12.2 per cent in 1972; for packing of cotton 37.89 per cent in 1969 and 15.45 per cent in 1972; for other agricultural operations 19.09 per cent in 1969 and 11.09 per cent in 1972.

Thus the Green Revolution seems to have some built-in corrective factor for reducing inter-district variations in agricultural wage rates and this is consistent with the hypothesis that as development proceeds inter-district variations in the earnings tend to decline.

However, for every agricultural operation as well as for overall agricultural wage rates, the inter-district variations have again registered some increase during 1973. It is too early to attribute this to any extraneous factor.

Another important aspect is that no single year observed minimum wage rate variation in respect of all operations. Similarly no single operation had consistently observed minimum wage rate variations over the period under study. That is, although, immediately after the introduction of new technology in agriculture (1966) the inter-district wage rate variations for different agricultural operations registered an increase, with the spread of that technology to other districts, the inter-district variations have tended to decline.

All districts in Punjab, leaving aside Gurdaspur and Sangrur, have registered a higher C.G.R. in money wage rates for agricultural labourers in the post-Green Revolution era, whereas in the pre-Green Revolution period Gurdaspur experienced the highest C.G.R. (12.2 per cent) followed by Ferozepur (7.1 per cent) and Jullundur (6.3 per cent). In the post-Green Revolution period the highest C.G.R. was experienced by Hoshiarpur (16.5 per cent), Rupar (15.5 per cent), Jullundur (13.00 per cent) and Ferozepur (12. per cent). The districts which experienced the lowest C.G.R. were Bhatinda (3.5 per cent) and Sangrur (4.1 per cent) in the pre-Green Revolution period, and Sangrur (1.3 per cent), Kapurthala (7.3 per cent) and Bhatinda (7.4 per cent) in the post-Green Revolution period. That is, although there are districts like Bhatinda and Sangrur which have experienced a lower growth rate in agricultural wage rates both before and after the Green Revolution, by and large the growth rates in agricultural wages are matching in the different districts viewed from the pre-and post-Green Revolution periods together. This was perhaps one of the factors reducing inter-district variability in agricultural wage rates.

The growth in money wages is partly neutralised by the ever increasing cost of living index. The growth in wage rates for agricultural labourers in real term has been very meagre in Punjab. A slightly favourable position in this respect seems to have been observed in the districts of Gurdaspur, Ferozepur, Jullundur,Kapurthala, Hoshiarpur and Ludhiana.

Policy Implications

Inter-district variations in wage rates had quite a distinct trend. Immediately after the introduction of new technology the inter-district variations for all operations registered an upward movement. This was perhaps due to the preferential treatment shown to some districts in the matter of introduction of new technology. However as the momentum of this growth spread to other districts, the variations, in the wage rates started registering downward trend and thus narrowing down the disparities in the wage rates. This confirms the hypothesis that development has built-in equaliser aspect in its wake.

Further, presently the Government is spending a huge amount of money on income or employment oriented projects for which uniform criteria are laid down. Since different districts and even the different regions in a district are heterogenous, there seems to be no sanctity for applying the uniform formula for the different districts in the state and much less for the country as a whole. Instead of frittering away the meagre resources over whole of the state or country, it is always better to concentrate efforts in particular regions, which fulfil certain economic norms in terms of the generation of employment opportunities. For example, in our exercise, district Sangrur fulfilled certain criteria to deserve special attention. Here the growth rate in agricultural wages even in the post-Green Revolution period was very meagre. This ensures not only better overall returns, but will also tend to narrow down the economic disparities in the different regions.

Unemployment and Rural-Urban Conflicts

K. N. Ninan

The prevalence of widespread unemployment and rural poverty resulting from rural population explosion, by and, large, leads to the overflow of that population to urban areas in search of better prospects and opportunities. This is true in respect of the rural poor and educated mass of population. The migration of rural elite and the business and trading classes also takes place but their migration does not create any sort of conflict between them and urban dwellers for they move with skills and capital with a productive capacity to open new ventures in such areas. While this benefits urban areas it also deprives the rural areas of much needed skills and capital. The flight of the young and educated robs the rural sector of her natural leaders. On the other hand, the influx of the rural poor into urban areas accentuates urban problems of inequality, poverty and unemployment. These factors give rise to rural-urban conflicts. The persistence of rural-urban disparities in India is attributed to her development strategy which, it is asserted, is urban-biased. This paper examines the above issues in the light of India's experience in economic development. Section I is devoted to a brief discussion on our population because the size and composition of the population will have a bearing on the size of the working force which, in turn, would determine the extent of unemployment. Section II dwells on migration in order to bring out the economic implications of migration. Section III points out some areas of rural-urban conflicts. The last section links up the entire discussion with the development strategy adopted by India.

I. Population, Working Force and Unemployment

Today we are a nation with a population of about 60 crores of which 80 per cent live in rural areas scattered over nearly 6 lakh villages. The remaining 20 per cent are squeezed within about 2700 towns and cities of which 142 have a population of more than a lakh each and we also have 9 big cities with a million people or more. A glance at our census reports would reveal not only the rapid pace at which India's population

---

*Institute for Social and Economic Change, Bangalore.

is growing but also the steady shift to urbanisation. Thus while in 1921, our rural population accounted for about 89 per cent of the total population, by 1971 it had come down to 80 per cent. This increase in urban population will be more marked when we note the percentage increase for both urban and rural population which show that during the period 1921-71, while urban population increased by 288.42 per cent, the rural population increased by only 95.50 per cent.[1] In other words, our urban population has trebled within this time span. The expansion of industrialisation may be considered as one of the most important causes for growing urbanisation, But the growth of urbanisation in terms of that trebled growth of urban population is not only on account of urban dwelling population explosion but also on account of the influx of rural population in urban areas. Ashish Bose states : "While it may be true that one consequence of industrialisation is increasing urbanisation when urbanisation occurs under conditions of rapid population growth, as is the case with India it is a much more difficult process than under conditions of low population growth rates."[2]

Our working force accounts for almost 35 per cent of our total population. Of this working force, the rural sector accounts for almost 70 per cent. This means that the bulk of of our workers are cultivators, agricultural labourers and those engaged in allied agricultural activities like livestock-keeping, poultry, fisheries, etc. This composition of working force suggests that any programme for generating our employment should chiefly cater to the rural sector. "Since industrial labour constitutes a very small proportion of the total labour force, the success of the employment plan will, in fact, mainly depend on providing productive work to the labour force in the agricultural sector where two-thirds of our labour force is employed."[3]

Unemployment, particularly acute unemployment and underemployment, is one facet of poverty. Hence any discussion on eradication of poverty will be incomplete if it does not pay attention to the prevalence of acute unemployment and underemployment in poverty-ridden nations. Therefore, the generation of more employment opportunities should be one of the major planks of any poverty eradication programme. According to K. N. Bhutani[4] : "Whereas in the first three Five-Year Plans employment generation was considered to be a by-product of economic development, it was only the Fourth Plan, for the first time, which recognised the need to integrate employment objectives as one of the major goals of development."

Unemployment can be broadly classified into two types, urban unemployment and rural unemployment. The two are different both in nature and characteristic. Phenomena like open unemployment and educted unemployed are more characteristic of urban areas while in rural areas, rather than open unemployment, it is underemployment and disguised unemployment which are prevalent. "The major economic problem of the weaker sections of the rural population does not seem to be unemployment per se but low productive employment...Any meaningful programme to remove poverty will have to concentrate on the provision of additional productive employment to a large section of the rural population."[5] Hence while in the urban sector provision of new jobs is more important, in the rural sector provision of productive employment that can generate more income and welfare is the need.

Precise and reliable estimates of unemployment in India are not available. The Fourth Plan estimated the backlog of unemployed to be between 9-10 million. Rural unemployment was put at 6.3 million. Unfortunately wide ranging estimates of the number of unemployed have been given by various studies and reports and it was precisely for this reason that the Government of India appointed the Dantwala Committee to enquire into the state of our unemployment estimates. Unfortunately the Dantwala Committee experienced difficulties in calculating the extent of rural unemployment due to the existence of conceptual problems of unemployment in adopting methodology of its measurement. However, the Bhagwati Committee estimated about 18 million to be unemployed in 1971 of which two-thirds belonged to the rural sector.

A fair indication of urban unemployment, particularly open unemployment, could be the figures of job-seeker registered with employment exchanges which showed 30 lakhs registered jobless in December, 1968 and this rose to 82 lakhs in December, 1973. Here again these figures may be an exaggeration or an underestimation (exaggeration due to double counting and underestimation because all jobseekers may not register themselves). Perhaps a fair indication of rural unemployment particularly underemployment and disguised unemployment could be that put forward by a Joint Workshop on Employment Generation held in 1972 which suggested that the volume of surplus labour for India as a whole was about 30 per cent of our tolal agricultural work force. The NSS figures (27th Round)[7] put the figure of unemployed at 34 million in 1972-73 of which 29.3 million were in the rural sector. Leaving aside figures of unemployed one could only venture to say that it has assumed threatening dimensions not only in India but also in other developing countries and this is of great concern to the planners and people. As the Pearson Commission Report on International Development points out with alarm : "In many, if not most of them (developing countries) unemployment is turning into a major social problem and obstacle to development. The failure to create meaningful employment is the most tragic failure of development."[8]

II. Migration ; Migration is a very important component affecting population growth and the direction and flow of migration have not only demographic but also political, economical and social implications. We can broadly think of three types of migrations ; the intra-rural migration, the intra-urban migration and the inter-rural-urban migration (in both directions). For our study interest will have to be focussed on rural to urban migration. According to the 1961 census the migrant population of All-India stood at 135.3 million ; this figure showed an increase of 24.8 million in 1971.[9] This works to about 30 per cent of our total population. Among the types of migrants the rural-to-urban migrants formed the second largest group, first being the intra-rural migrants. Economic, political and other factors have been responsible for migration. To cite a few examples, during the 1943 famine in Bengal,starving people in lakhs flocked to Calcutta with the hope that the fabulously rich city would save them from perishing. Incidentally Calcutta also provides the interesting phenomenon of reverse operation for migration during the latter half of the sixties. The lack of development activity in Calcutta throughout the decade apparently caused some to give up their hopes in the cities for the slender existence available in the rural hinterland. Similarly the ravages of plague around 1911 brought about an exodus of urban population to the rural areas. Among economic factors those related to employment appear to predominate in reasons for migration as the following survey conducted in Bangalore City would reveal. Of the 1745 sample heads of households interviewed in the survey, it was found that almost 62 per cent were migrants ; and 95 per cent of the migrants came from the neighbouring areas of Andhra

Pradesh, Tamil Nadu, Kerala and Karnataka. The survey further reveals that economic factors related to employment caused 64.38 per cent of the migration. Of this almost 28 per cent migrants came in search of employment, 25 per cent after getting employment and the remaining owing to transfers and dependency. The survey results are strengthened by the fact that almost 55 per cent of the migrants had come to Bangalore after 1955, when, as is well known, industrial activity in the city received stimulus with the establishment of major public and private sector enterpriseses. The pattern of reasons for migration over time is more revealing in that factors related to employment hold the sway. It thus appears that factors related to employments play a crucial role in determining the size and flow of migrants.

III. Rural-Urban Conflicts

Rural-urban conflicts could arise when rural populations migrate to the cities in search of employment. This in itself need not give rise to any conflict but the problem arises when, and to quote Uma Lele, "Urban employment has not been increasing at a pace fast enough to absorb the flood of rural migrants.[10] And quite often this leads to serious law and order situations. In fact, Karl Marx had described how riots occurred in Lancashire and Manchester in England in the nineteenth century because of this influx of "surplus labour" from the areas at a time when these cities were themselves unable to provide enough jobs for their own inhabitants. 'Sons of the soil policy', a live issue in India, owes its existence to a similar source. Another aspect is the intense pressure on civic amenities in cities, already in a pitiable state, brought about by this influx from the rural areas. Thus, in Calcutta, for example, more than one-thirds of her population live in shacks, hovels and substandard houses while in Bombay many live on the pavements and in squalied slums. A 1960 World Bank Mission Report[11] on Calcutta points out : "There is hardly any aspect of community development that is keeping pace with the growth of Calcutta's population and with the requirements of its hinterland. Overcrowding, degradation of housing, health hazards, primitive water supplies, etc. all are increasing the cost of moving and of providing the many services that a growing industrial region demands of its metropolis." This pressure on civic amenities has assumed threatening dimensions that many governments have been prompted to take corrective measures. It is therefore not surprising that the Government of Maharashtra has mooted the proposal for work-permits to regulate the inflow of immigrants into Bombay which is said to average 300 families per day[12]. How far these kinds of solutions will solve the problem is uncertain but as one writer[13] points out: "At the present rate of population growth, migration to the cities cannot be totally stopped but there is need for regulating this continuous exodus both for preventing urban decay and for ensuring a balanced growth of villages and small towns."

An issue of concern often leading to clash of rural-urban interests has been regarding the choice of technology for our development. Should it be capital-intensive or labour-intensive ? This is an issue of great relevance to a country like India which has enormous manpower resources. Opting for capital intensive could be at the expense of employment while labour intensive would result in fuller utilisation of our abundant manpower resources Similar is the conflict between the modern and traditional sectors which are generally analogous to the urban and rural sectors respectivly. The pattern of urban development has resulted in large chunks of rural migrants turning into casual labourers or taking up other menial works because their skills are out of tune with urban needs. The tendency to regard everything traditional as irrelevent is to be deplored. Would it not be wiser to refine and make an efficient use of our traditional technology ? This perhaps explains recent efforts to improve the bullock-cart which even today is the most important mode of transport in rural areas.

The prevalence of rural urban conflicts is no less due to the widening of rural-urban disparities. The disparity in the provision of facilities to rural and urban areas is nowhere so striking as in the field of education. Educational facilities, particularly for higher education, are lacking in rural areas, and exodus to urban areas is inescapable. It is noted that often those unemployed substitute education for unemployment. This is very much true for India, as a Ford Foundation study[14] points out. The net result is that those genuinely interested in pursuing education often find the door locked against them.

Organised labour which is more characteristic of urban areas has succeeded in raising the price of labour substantially over those that prevails in rural areas. While this has helped improve the welfare of those already employed it has also indirectly led to increasing the number of those without any job. Here also the reflection is on rural-urban disparities. Then again comes the prevalence of the practice of overtime. Would it be justified to have this practice while large numbers are unemployed ?

One often hears of urben exploitation of rural areas and vice versa. To cite an example it is alleged that often fair prices are not offered to producers of agricultural commodities and that more often they are fixed with the interests of urban consumers in view. Similarly one could cite a reverse operation of rural exploitation of the urban sector, especially during times of bad harvest Here the reference to rural exploitation applies only to those segments of the rural population which command the marketable surplus and excludes small farmers and labourers who are also victims of this exploitation. Reverting it to an international plane we see how the developing nations are being exploited by the developed. Thus while the developing nations are virtually compelled to sell their raw materials at low prices to the developed nations, they are made to buy the finished goods from them at highly inflated prices.

IV. Development Strategy and Economic Development

It has been pointed out how economic factors have contributed to rural urban conflicts and disparities, and also that our development strategy is heavily weighted in favour of urban areas. This occurred due to a number of historical, economical, political and social factors. One such historical factor, for example, was the British rule which was instrumental in wrecking our rural industries.

Michael Lipton, on the other hand, opines that our development strategy was not only urban biased but also big farmer oriented. Though agriculture accounts for 50 per cent of India's national income and 70 per cent of the working force, in investment allocations under the plans it has been deprived of its due share. This issue assumes significance when, to quote Lipton, "extra investment would produce more in agriculture than elsewhere."

Most of our major industries even after the advent of independence sprung up in and around a few large cities. Thus, for example, the machine tool industry is concentrated in and around Bangalore and Poona, automobile industry around Bombay, Calcutta, Madras and Poona, textile industry around Ahmedabad, Baroda, Bombay, etc. Even in the case of small-scale industries there appears a tendency to concentrate in developed regions. One explanation why we had opted for such a strategy could have been the expectation that these urban centres would serve as the focal growth centres around which the development of surrounding regions could occur. Unfortunately these benefits have not spread to surrounding regions. Take, for example, the South East Resource Region (SERR) comprising Orissa, Bihar and parts of W. Bengal and Madhya Pradesh. As B. G. Verghese points out : "Massive investments in the coal-steel belt have failed to radiate any significant socio-economic benefits or trigger regional growth...Although this region produces over 90 per cent of the country's steel and 89 per cent of its coal and is rich in other minerals, forests and power, its per capita income is half the national average and much of its agriculture is barely above subsistence level". The heavy and basic industries that came up were concentrated around five enclaves of twelve cities, namely Asansal-Durgapur : Dhanbad-Sindhri ; Jamshedpur ; Rourkela and Bhilai. The Regional Development Plan for this region (SERR Report) notes with alarm : "The income originating from the manufacturing and mining sector has been almost wholly taken out of the region and except to the limited extent of the wages earned it has not become available to the region for general development." This is a classic example of our faulty development strategy as well as its exploitative nature.

Now while I have recounted our urban-biased development strategy we should not also overlook the fact that we have made attempts to promote rural development. Thus is 1952 Community Development Programme was launched to promote the full development of material and human resources of rural areas with a view to attaining higher levels of living. Other programmes followed like Applied Nutrition Scheme, Rural Works Programme, a Crash Programme for Rural Employment, Rural Electrification Scheme, Drought Prone Areas Programme, Whole Village Development Programme, SFDA, etc. While there has been no dearth of schemes one finds that most of them have failed to register the desired impact. The 'Integrted Rural Devlopment Programme' is the latest to join the fray. All this shows how crucial rural development is to the overall economic development of a country.

A strategy of growth that gives due importance and emphasis on urban and rural development is essential and vital for the economic development of a nation. To quote the Ford Foundation Report: "An essential characteristic of the employment problem is the way in which it permeates the whole economy. The most fundamental and promising attack on employment problem in developing countries is in efforts to redress the present urban bias in development strategies and the consequent need to disperse economic activity much more widely than heretofore'." Therefore only through revision of total development strategy and its application to rural and urban areas, modern and transitional sectors, etc. that lasting solutions can be found." So the crux of the issue is reformulation of our development strategy without which rural-urban conflicts and disparities will persist.

Footnotes

1. See P. J. Bhattarcharjee and G. N. Shastri, *Population in India*, VikasP. H. Ltd., 1976, New Delhi,

2. Ashish Bose, *Six Decades of Urbanisation in India 1960-61*, in M. S. A. Rao (ed.) Urban Sociology in India, Orient Longmans, Chapt. VI, 1974, p. 177.

3. G. S. Bhalla, *Causes and Cures* Seminar 167, July 1973. New Delhi, p. 20.

4. K. N. Butani, *A Review of India's Experience in Manpower-Planning*, IAMR, New Delhi, p. 25.

5. G. S. Bhalla, op. cit.

6. *Report of the Joint Workshop on Exployment Generation, New Delhi*, Aug, 2 to 7 1972 Govt. of India, Ministry of Labour and Rehabilitation,

7. V. M. Dandeker, *The Dimensions of the Unemployment Problem, 1972-78*, Monthly Commentary, IIPo, New Delhi, Annual Number 1976, p. 79.

8 Vide Martin Karcher, *Unemployment and Underemployment in People's China*, World Bank Reprint Series, No. 25.

9. G. K. Mehrotra, *Birth Place and Migration in India*, Census of India, 1971, Spl, Monograph No. 1, World Population year 1974,

10. Uma Lele. *On Developing Rural Settlements*, Southern Economist, August 15, 1976, Vol. 15 No. 8. Bangalore, p. 29.

11. See Seminar 163, March 1973, P. 15.

12. See *Keeping the Poor out of Bombay*, Economic and Political Weekly, March 29, 1975, Vol. X, No 13, p, 537.

13. K. N, Subramanian, *Face Lift for the Rural Scene*, Southern Economist, Aug. 1976, Vol. 8, Bangalore, p, 27.

14. Edgar O. Edwards, *Employment in Developing Countries*, Report of a Ford Foundation Study, July, 1974.

Central Budget 1977-78

The first budget of the Janata Government seeking 'to accelerate the pace of economic progress and to distribute its fruits equitably under a framework of democracy and individual freedom was presented by the Finance Minister, Shri H. M. patel, to the Parliament on 1[illegible] June.

In the budget estimates of the current year, the total receipts are estimated at Rs, 15,356 crores. Gross tax revenues at existing rates of taxation are estimated at Rs. 8,879 crores showing an increase of Rs. 798 crores over the Revised Estimates for 1976-77. Of this increase, Rs. 101 crores will accrue to the States as their share of taxes. Union Excise duties are expected to yield Rs. 4,550 crores showing an increase of Rs. 373 crores over the revised estimates for the last year, receipts from income and corporation taxes are estimated at Rs. 2,258 crores, an increase of Rs. 180 crores. Customs receipts at Rs. 1,734 crores will be higher by Rs. 243 crores as compared to last year. Market loans are expected to yield Rs. 1,000 crores as the Government propose to borrow Rs. 800 crores against drawal of foreign exchange reserves. Net external asistance after providing for repayments and interest payments is estimated at Rs. 1,052 crores including disbursements against new credits.

A provision of Rs. 5,790 crores has been made in the Central Budget for 1977-78 for the Central Plan and assistance towards plans of States and Union Territories as compared to the last year's provision of Rs. 4,759 crores, thus maintains the tempo of development.

Non-Plan Expenditure

Referring to the estimates of non-plan expenditure, the Finance Minister said that in line with his assurance to the Parliament that all Ministries and Departments of Government and public sector agencies would be asked to observe the utmost economy in expenditure keeping in view the present Government's emphasis on austerity and avoidance of all forms of ostentation, detailed instructions have since been issued in this regard for a strict compliance by Ministries and Departments. The full impact of economy measures will be known only after the detailed exercises have been completed. Certain areas of non essential expenditure have already been identified and the Budget documents reflect the reduction of about Rs. 130 crores of this expenditure as a result of this exercise.

Deficit

Taking into account the expenditure of both on plan and non-plan accounts and the estimated receipts at the existing levels of taxation, the Budget for the current year shows a deficit of Rs. 202 crores.

In the estimates of non-plan expenditure, the provision for Defence expenditure is Rs. 2,752 crores, Rs. 56 crores less than the provision made in the Interim Budget. The provision for food subsidy and carrying cost of buffer stocks have been for the present retained at Rs. 460 crores. This will, however, be reviewed on the basis of emerging trends during the course of the year.

The net interest liability of the deficit states, as recommended by the sixth Finance Commission has been computed and a provision of Rs. 72 crores has been made in the budget for disbursement of additional grants-in aid to the states concerned on this account, in relation to the three years ending March 31, 1977.

Relief for Pensioners

The Finance Minister said that he had received requests from Central Government pensioners for an increase in the quantum of relief on their pensions in view of the high cost of living. He has, therefore, proposed a special relief at graded rates to them costing the exchequer Rs. 10 crores annually.

Annual Plan

Regarding the outlays on the annual plan for 1977-78 the Finance Minister said that the plan strategy has to be reappraised so that our economic ills could be overcome through a comprehensive recording of plan priorities. The reconstituted Planning Commission would, no doubt, address itself to these tasks. Meanwhile, the Government had made a quick review in consultation with the various Ministries and tried to impart "A new direction to our development programmes in line with the priorities and objectives set out in the manifesto of the Janata Party." Despite serious limitations in refashioning the plan according to our thinking, because of the commitments already made, the room for manoeuvrability was limited. We were not writing on a clean slate, he said. Even so, appreciable savings have been affected and schemes of relatively low priority have been suitably rephased.

The Finance Minister said that true to the promises made to the people, in the recasting of the plan, provision has been made for additional outlays for agriculture, irrigation, power, khadi and village industries in rural areas and wide ranging rural infrastructure programmes covering such schemes as durable link roads and rural drinking water supply. It was his intention to step up the further outlay for the year on programmes designed to develop rural infrastructure facilities so that over a period of about five years, the basic needs of the entire rural population could be met

Integrated Development

Emphasising the importance of making integrated develoment of crop production, livestock, poultry, fisheries and forestry, the Finance Minister said that special emphasis will need to be laid on developing dairy industry on a cooperative basis with a view to enabling milk producers to get better and fairer prices. The production policy should be based on modernisation of agriculture in which technology should, by far, be the most crucial input to make a sustained and high rate of growth possible. The existing plan provision and priorities have been rephased for plugging gaps in developing and identifying potential areas to bring about further acceleration of the phase of agricultural growth. This will include strengthening rural infrastructure as the basis for future accelerated development, generation of employment in rural areas, special attention to the needs of the weaker section of the society and giving fillip to the production of cotton, oilseed and pulses so as to correct the supply and demand imbalances.

Desert Development

A pilot project for desert development in Haryana, Gujarat and Rajasthan is being evolved and provision has been made for this purpose in the Budget Estimates.

Irrigation

Rs. 100 crores have been provided as advance plan assistance to the State for irrigation projects. The plan outlays for minor irrigation will be supplemented to the extent of about Rs. 260 crores from the Agricultural Refinance and Development Corporation and other lending institutions. Under the programme of rutal electrification for energising the pump sets, a provision of Rs. 175 crores has been made which will also be augmented to a significant extent by institutional finance.

Agriculture

The total plan outly on agriculture and allied services, major, medium and minor irrigattion projects and fertilizers, together with provisions for cooperatives and power sectors attributable to rural areas, works out to Rs. 3024 crores. This constitutes happily 30 4 percent of the aggregate outlay of the Central, State and Union Territories plans.

Rural Development

Regretting that the needs of the rural areas had been sadly neglected, the Finance Minister said that the Centre should take the initiative in promoting the construction of approach roads which constitute an essential ingredient of any programme for building up the infrastructure for rural development. It is, therefore, proposed to make a beginning with an outlay of Rs. 20 crores which, suitably supplemented with the resources of the State Governments and local bodies would accelerate the programme in this vital area. The new scheme 'Grain for work' could also be utilised imaginatively for this purpose.

The Central Government should intervene actively and supplement the efforts of the States. He has proposed to make an earnest start in the current year with an additional provision of Rs. 40 crores over and above the existing outlays for this programme The allocations would be progressively stepped up to carry the benefits of the problem areas over a pariod of five yours.

Power

For power development, a sum of Rs. 234 crores had been provided in Central Plan. This included Rs. 33. crores for Singrauli Super Thermal Station, Rs. one crore for initiating action on a second super Theremal Power Station, Rs. 17 crores for Inter-State transmsssion lines, and Rs. 25 crores for nuclear power project.

The State-wise account for the bulk of the provision for power, envisages an outlay of Rs. 1676 crores. Additionally, a sum of Rs. 20 crores is being provided to the Rural Electrification Corporation for systems improvement and for providing I. T. capacitors for rural consumers, both designed to minimise loss of energy.

Oil Exploration

Embasising the importance of self-sufficiency in energy, the Finance Minister said that the provision in the plan for petroleum is being stepped up from Rs. 485 crores least year to Rs. 677 crores this year. Of this, Rs. 451 crores will go to the Oil and Natural Gas Commission for their on-shore exploration programmes and for accelerating the pace of off-shore exploration. Recently, a scheme for development of Oil and Natural Resources of Bombay High and bassein fields had been cleared. Indigenous production of crude oil is expected to reach 11·31 million tonnes in 1977-78 against 8 89 million tonnes last year.

A special provision of Rs. 5 crores has been made for Neyveli Lignite Corporation for a new lignite-based power plant with a capacity of 200 MW. in view of the difficult power situation in Tamil Nadu. The Budgetary allocation for transport and communications will be Rs. 651 crores of which Rs. 302 crores will be for the Railways which have a plan outlay of Rs. 480 crores.

An additional outlay of Rs. 10 crores has been provided for opening more post offices and extension of telephone and telegraph facilities in rural areas. The Khadi and Village Industries, which, if properly organised and supported, were capable of generating employment on a large scale. A provision of Rs. 35 crores has been made for these in the plan. More funds will be allocated if required. These schemes are expected to provide employment for about 25 lakh persons. An outlay of Rs. 20 crores has been provided for handloom and Rs. 4 crores for sericulture, which is a substantial step up over the least year.

I. Exemption Limit for Personal Income Taxation

It is proposed to provide that no income tax shall be payable by individuals, Hindu undivided families, unregistered firms, associations of persons, etc. whose taxable income does not exceed Rs. 10,000. The nil rate slab of income is being retained at Rs. 8,000. Hence, where the taxable income exceeds Rs. 10,000, the excess over Rs. 8000 will be charged to tax as at present, subject to the grant of marginal relief in cases where the taxable income exceeds Rs. 10,000 by a small margin.

II. Income Tax and Surcharge Rates

It is not proposed to make any change in the basic rates of income tax.

The rate of surcharge on income tax in the case of all categories of tax payers, except companies, is being increased from 10 per cent to 15 per cent, of the income tax payable by them. With this increase, the maximum marginal rate of income-tax (including surcharge) will be 69 per cent as against 66 per cent at present.

III. Wealth Tax Rates

It is proposed to increase the rates of wealth tax at slabs of net wealth over Rs. 2,50,000 The existing slab of net wealth up to Rs. 5,00,000 is being split into two—first slab up to Rs. 2,50,000 and the next slab of Rs. 2,50,001-5,00,000.

IV. Deposits Under the Compulsory Deposit Scheme (Incom-tax Payers) Act, 1974.

The scheme of compulsory deposits by Income Tax payers is proposed to be continued for another two years.

Persons who are over 70 years of age will, however, not be required to make any compulsory deposit hereafter.

V. Corporation Tax Rates

It is not proposed to make any change in the rates of income tax-application in the case of companies.

Income-tax payable by companies is increased by a surcharge of 5 per cent, on the income-tax payable by them, under the Finance Act, 1976, companies could make a deposit for a period of five years with the Industrial Development Bank of India in lieu of payment of surcharge on income-tax. The option for making such deposits in lieu of payment of surcharge is proposed to be descontinued.

IV. Incentives for Industral Growth and Revival

(1) At present, invesentment allowance is granted at the rate of 25 per cent of the cost of machinery or plant installed in specified industries and in small scale industrial underkings. It is proposed to extend the scope of this concession to all industries except those which are engaged in the manufacture of specified low priority items.

It is proposed to provide investment allowance at the higher rate of 35 percent in respect of machinery or plant installed for the manufacture of any article made by using technology or other knowhow developed in a laboratory owned or mainly financed by the Government or a laboratory owned by a public sector company or a university.

(2) In order to facilitate the voluntary amalgamation of sick industrial units with sound one, it is proposed to provide that where scheme of amalgamation of companies is approved by the Central Government, the accumulated loss and unabsorbed depreciation of the amalgamated company will be allowed to be carried forward and set-off in the hands of the amalgamated company.

(3) Closely held industrial companies are being exempted from the requirement of compulsory distribution of dividends.

VII. Tax Concessions for Promoting Rural Development

(1) Expenditure incurred by companies on approved programmes of rural development will be deducted in computing their taxable profits.

(2) Preferential tax treatment is proposed to be accorded to small-scale industrial undertakings set up in rural areas and which begin their manufacturing activity after 30th June, 1977. Tax payers setting up such industrial undertakings will be entitled to a deduction in the computation of their taxable profits of an amount equal to 20 per cent of the profits derived from the undertaking. This concession will be available for each of the 10 years beginning with the year in which the undertaking begins to manufacture or produce articles.

VIII Incentives for Promoting Investment

(1) Capital gains arising from the transfer of long-term capital assets will be exempted from tax if the sale proceeds received by the transferor are re-invested within six months in any or more of the following assets.

(A) Securities of the Central Government or a State Government ;

(B) Savings Certificates of the Central Government ;

(C) Units in the Unit Trust of India ;

(D) Debentures notified by the Central Government for the purposes of Section 10 of the Income Tax Act ;

(E) Fixed deposits with nationalised banks and co-operative banks ;

(F) Shares which are issued to public or are listed in a recognised stock exchange in India.

The exemption will be forfeited if the new asset is transferred by the taxpayer before the expiry of three years.

(2) Capital gains arising from the transfer of a capital asset held

by the taxpayer for more than 60 months immediately before the date of transfer are regarded as long-term capital gains and charged to tax on a concessional basis. It is proposed to reduce the holding period from 60 months to 36 months.

IX Other Proposals

(1) In order to avoid hardship in the case of small investors, particularly those from rural areas, dividends up to Rs. 250 will be exempted, subject to certain conditions, from the requirement of deduction of tax at source.

(2) Where a capital asset is acquired by a tax payer before 1st January, 1954, the tax payer has the option of substituting the fair market value of the asset as on that date in place of its actual cost of acquisition for the purposes of computation of capital gains arising on its transfer. It is proposed to extend the said date by 10 years to 1st January, 1964,

(3) The amount of donations for charitable purposes qualifying for deduction under Section 80G is limited to 10 per cent of the gross total income of the donor, subject to a further monetary limit of Rs. 2 lakhs. The monetary ceiling of Rs. 2 lakhs is proposed to be raised to Rs. 5 lakhs.

(4) At present, 50 per cent of the remuneration received by Indian technicians etc. from a foreign company or a foreign enterprise for services rendered outside India is deducted in computing the taxable income. It is proposed to extend the scope of this provision so that remuneration received by Indian technicians etc. in foreign currency from Indian concerns for services rendered outside India also qualifies for this deduction.

BUDGET AT A GLANCE

	BUDGET 1976-77	REVISED 1976-77	BUDGET 1977-78
Revenue			
Receipts	8219	8507+	9424+130%
Expenditure	7690	8554	9487
	(+) 529	(–) 47	(–) 63+130%
Capital			
Receipts	4423	5252	4942
Expenditure	5280	5630	6081
	(–) 857	(–) 378	(–)139
Receipts	12642	13759	15366+130%
Expenditure	12970	14184	15568
Overall deficit	328	425	202–130%
		Uncovered deficit	72

%effect of budget proposals. Figures in crores of Rupees

Indian Economy 1976-77

The pre-budget Economic Survey presented in Parliament by Shrt H. M. Patel, Finance Minister, takes a cautious view of the performance of the Indian economy in 1976-77. It characterises the performance as uneven and draws attention to serveral areas where the economy seems to have fared worse than in 1975-76.

Gross national production is estimated to have increased by less than 2 per cent as compared with an increase of 8·5 per cent in 1975-76. There was a decline in agricultural production of 5·6 percent as compared with an increase of 15·6 per cent in 1975-76. Foodgrains production is estimated to have fallen to around 111 million tonnes from 120·8 million tonnes in 1975-76. There was a serious drop in the output of edible oils and cotton production did not show any improvment.

Prices rose by 11·6 per cent during the year because of the shortfall in the production of some of these commodities. Money supply increased by 17·1 per cent and added to the apprehensions about inflationary pressures. Industrial investment did not show any great signs of revival. Most important of all, there were no signs of any improvement in the unemployment situation.

On the other hand, the production of sugarcane and jute and mesta registered an increase. Industrial production increased by 10 per cent, something which had not happened over a decade. A massive procurement operation was sucessfully completed and stocks of foodgrains in 18 million tonnes were built up by the end of the year. Exports rose by 23 per cent in 1976-77. What is striking is that this was due as much to an increase in volume as in value. Imports decline by 7 per cent in sharp contrast to 1975-76 and there was a small surplus of Rs. 72 crores. Inward remittances have also increased substantially during the year and India's foreign exchange reserves amounted to Rs. 2,863 crores at the end of the year after repayment of Rs. 332 crores to the I.M.F.

According to the Survey, this brings out clearly the problem which the Indian economy is facing at present. The rate of growth of the economy has been much below what is needed to bring about a perceptible increase in the standard of living of the people. The rate of growth is low because agricultural production which amounts for nearly half of GNP is not increasing rapidly. The growth impulse of the green revolution seems to have been exhausted and it has not been able to replace it with anything in rice or coarse grains.Pulse production seems stagnant as also that of commercial crop with the exception of sugar cane.

Industrial growth also has been low barring the year 1976-77. Lack of demand seems to be the main reason for slower production and consequent excess capacity. Industrial investment has not revived significantly. On the contrary, closures through sickness seem to be increasing. Export growth has mitigated the impact of these factors to some extent and will continue to do so. But in any economy where exports account for about five per cent of the GNP they cannot be instrument of leaving the economy out of this low growth phase.

The Survey, therefore, suggests that in order to achieve high overall growth rates, the rate of growth in agriculture should increase substantially. To achieve this, it is necessary to have both more investment and better implementation machinery. An increase in investment shall get highest priority considering that water is the most important input and that only about twentyfive per cent of the total area are cultivated.

Price stability is important for steady growth. Since the factors which were operative in 1976-77 still continue in 1977-78, there is need for great vigilance on the price front. Not only should credit policy emphasise restraint but there should be greater fiscal discipline. The larger volume of investment needed should be financed from resources mobilised from the public but a larger proportion of such resources should go into saving rather than in public consumption. Simultaneously, effort should be put into a larger mobilisation of resources through an imaginative tax policy. As the Jha Committee is looking into indirect tax reform, the question of direct tax reform needs to be examined as well.

Simultaneously the stocks with Government should be deployed whenever needed and imports should be effected flexibly.

The twin instruments of buffer stocks and foreign exchange reserves should be used most effectively for this purpose. Advance information about domestic production pospects and advance planning of imports are absolutely essential.

The need to pursue the current export strategy is obvious. The manoeuvrability which foreign exchange reserves have given us should be retained through a vigorous export drive, though this need not extend to commodities for domestic essential consumption. India has the necessary capability and expertise and the experience gained so far should be put to the maximum benefit.

The Survey observes that unemployment is India's most serious problem. It cannot be solved without a high rate of growth of the economy. To achieve it more resources for investment have to be raised through a flexible fiscal policy and more public saving has to be generated through a control of public consumption. This is in addition to measures which need to be taken to increase individual savings. Public savings can be stepped up substantially through higher productivity, better management and appropriate price policies.

Secondly, investment will have to be definitely more employment oriented. More investment has to be undertaken in sectors like agriculture, irrigation, village industries, small scale industries and a more extensive search has to be undertaken for an appropriate technology. Also these have to be organised far more efficiently if resources are not to be wasted.

A great deal of constitutional reform is necessary if these vital changes are to be brought about satisfactorily. Land reform needs to be implemented effectively. The process of planning and implementation should have greater involvement of the people if productivity and resources mobilisation are to improve. Finally the organisational underspinning of extension, research, supply of imputs and marketing has to improve very greatly.

Gross National Product, Savings and Investment

After achieving a record rate of growth of 8.5 per cent in real terms in the gross national product in 1975-76, the Survey estimates that the growth in GNP would be only between 1.5 and 2.0 per cent in 1976-77.

Discussing the outturn of agricultural output for 1976-77 the Survey estimates that the total foodgrains output would be around 111 million tonnes compared to 120.8 million tonnes in 1975-76. Overall it is estimated that the index of agricultural production would show a decline of 5-6 per cent in 1976-77 compared to 1975-76.

The Survey draws attention to the fact that Indian agriculture is still conditioned by the weather factor and will continue to do so for quite some time. It also points out that the rate of growth of agricultural production in the seventies so far has been less than in the sixties. High priority should be given to bringing more land under irrigation and to giving particular attention to water management if productivity in agriculture is to increase. More resources have to be made available for irrigation, a plan should be drawn up for conjunctive use of surface and ground water resources and arrangements will have to be made for optimal use of water available, including institutional reform. Simultaneously, the supply of inputs, such as HYV seed, fertilisers, pesticides, better technolgy and credit needs to be improved considerably.

While commending the improvement in credit facilities in the agricultural sector in recent years the Survey draws attention to the fact that even with this progress only about a third of the credit needs of the agricultural sector is now met by cooperatives and other credit organisations. Therefore, a further extension of credit facilities is inevitable.

It also suggests that a rural employment generation policy should form part of a local area development strategy. This should include the development of agriculture and animal husbandry, the development of infrastructure, better utilisation of conventional waste materials, farm forestry, etc.

The rate of growth of production in the small scale sector is estimated to be appreciably higher than that in the large scale sector. However the overall rate of capacity utilisation in this sector was only of the order of 50 per cent.

The Survey continues that without a step-up in investment it would not be possible to sustain the rate of industrial growth achieved in 1976-77. While there was some increase in industrial investment undoubtedly there was no great upsurge. There was not much of a revival in construction, and new investment was largely in the form of expansions and additions. The emergence of a buyer's market also seems to have led to a cautious attitude. Sickness in industry, though not wide-spread, has been a matter of concern for some time, particularly in industries like cotton textiles and jute. Since take-over by Government is no longer the most efficient solution, other measures have to be considered. Besides through monitoring and an information system, it is necessary to prevent deterioration.

Employment in the organised sector increased by 5.20 lakhs or 2.6 per cent in 1975-76, due mainly to an increase of 4.7 lakhs in the public sector. The number of job seekers on the live registers of employment exchanges in the country increased by 4.8 per cent to 9.77 million at the end of December, 1976. This is, however, less than half the increase in 1975. The total number of educated unemployed also rose from 48 lakhs in 1975 to 5I lakhs in 1976. The employment situation continues to be grave and the provision of employment has to be a prominent objective of devlopment.

Price Behaviour and Price Policy

The wholesale price index recorded an increase of 11 per cent in the first half of 1976-77 mainly due to an increase in the prices of food items and industrial raw materials. Prices of gur, groundnuts and groundnut oil, and raw cotton accounted for half of the total rise. In the latter half of 1976-77, the price increase was less than one per cent, but the prices of items like tea, pulses rose sharply. The erratic behaviour of the monsoon, the expectation of a lower groundout crop and cotton crop and the increase in money supply were responsible for this price rise.

The strengthening and extension of the public distribution of essential commodities countinues to be one of the important elements of price policy, Although the coverage of public distribution of foodgrains and sugar has increased over the years, releases of foodgrains and sugar has increased over the years, releases of foodgrains from Government stocks during 1975-76 (November-October) at 9·05 million tonnes were over 2 million tonnes lower than in the preceding year because of large availability in open market. Imports against past commitments and in exceptional large procurement led to stocks of foodgrains mounting to 18 million tonnes at the end of 1976-77.

The production of controlled cloth has been declining continuously and the obligation to produce controlled cloth was reduced from 800 million sq. metres to 400 million sq. meters because of the financial difficulties experienced by many mills. Due to the rise in cotton prices even this became difficult. So the ex-mill prices were raised by 35 per cent in order to cover costs better. The consumer,however, did not suffer because the Goverment give an equivalent subsidy to the national consumers cooperative federation. At the some time a part of the controlled cloth obligation was passed on to the handloom and powerloom sector. A subsidy of Re. 1 per metre would be needed to work this scheme.

The experience of 1976-77 shows that measures of price reduction have necessarily to be accompanied by improved distribution if the benefits thereof are to reach the common man. The food buffer stock and large foreign exchange reserves are powerful tools to maintain price stability. To use them effectively advance planning and administrative flexibility are needed. Our ability to control prices is also limited by the state of international prices. Moreover, in regard to items like pulses, imports are not possible and therefore the ultimate solution to the problem is increased production at home.

Development expenditure by State Governments rose by 7·5 per cent and the trend over the past three years indicates that the production of development to total expenditure is rising. Current revenues are not rising fast both because of a decline in share of central taxes in 1976-77 and losses incurred by departmentally run state undertakings.

Another disquieting trend observed in the State budgest in recent years has been that some of the states whose finances were hitherto viable are showing signs of deterioration. The problem of overdrafts by certain states has also again become a cause for concern.

It is worth emphasising that during 1974-75 the states made commendable efforts at resource mobilisation. However, most of the States have not made any serious attempt to tax relatively undertaxed sectors. There is also a tendency amongst the states to slacken their effort at additional resource mobilisation in anticipation of the appointment of a Finance Commission. The concessions announced recently by several states with regard to procession tax, sales tax, property tax and land revenue have further compounded this problem. Therefore an urgent need to consider how they can augment their resources and bring about a better equity and elasticity in their tax structure.

The improvement in the financial results of central Government commercial undertakings witnessed in 1974-75 was not maintained in 1975-76. With few exceptions, the working of the enterprises leaves much to be desired and financial return from the enterprises is still far from adequate. The railways showed a promising improvement in their financial results in 1976-77. The working of the department of Posts and Telegraphs, however, came under strain in the last few years. In regard to state enterprises, compared to electricity undertakings and irrigation works, the road transport undertakings of the states have not done too badly.

The measures taken by the Reserve Bank have only partially, succeeded in limiting the growth of money supply. Every effort has, therefore, to be made to contain monetary expansion in 1977-78, without however, affecting production and growth.

Foreign Trade and Balance of Payments

During 1976-77 the favourable trends in India's external payments position continued. Exports increased by 23·2 per cent to Rs. 4980·6 crores in 1976-77 and imports declined by 6·8 per cent to Rs. 4908·2 crores and a trade surplus of Rs. 72·4 crores was recorded in contrast to a deficit of Rs 1222·4 crores in 1975-76. Net invisible receipts particularly inward remittances, were buoyant. Foreign exchange reserves, therefore rose by Rs. 1371·3 crores in 1976-77 compared to an increase of Rs. 881·2 crores in 1975-76. At the end of 1976-77, India's foreign exchange reserves stood at Rs. 2863 crores. However, this result has been achieved partly at the cost of investment for growth, according to the Survey.

The increase in inflow of remittances through banking channels seems to have been due to factors such as the large increase in the number of Indians working abroad, the checking of smuggling, the narrowing down of the gap betweent internal and external prices of gold and the improvements in the strength of the rupee.

The decline in imports in 1976-77 was esssentially due to marked eduction in the imports of food and fertilisers partly offset by increases in the value of the imports of raw cotton, vegetable oils and fats etc. The growth in exports was on account of iron and steel, engineering goods, cotton fabrices and apparel, leather, fish, tea, iron ore, oil cake etc, on the other hand, exports of sugar and jute manufactures suffered a sharp decline.

The gross inflow of external assistance increased from 1973-74 to 1975-76 after touching its lowest level in 1972-73. In 1976-77, it declined again to Rs. 1747 crores from Rs. 1839 crores in the previous year. Similarly, the inflow of external assistance net of debt servicing declined from Rs. 1153 crores in 1975-76 to Rs. 986 crores in 1976 77. Of late there has been some further improvement in the quality of assistance provided by some of the donor countries, e.g., U.K , Federal Republic of Germany, Netherlends, Sweden, Norway, Denmark and Canada.

SADHANA Beauty CREAM

her flattering loveliness—

The reward of her day to day beauty care with Sadhana beauty cream.
Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.
—essential in day to day Beauty care

**SADHANA
AUSADHALAYA
DACCA**

CALCUTTA-48
Branches all over India

SBC. 5/71

Annual
Inland Rs. 30.00 (Net)
Foreign US $10.00
Postage by surface
US $2.00
This Copy Rs. 5.00

REGISTERED NO. WB/NC 80
R. N. No. 5182/57

Published by H. Roy from 10, Galiff Street. Block 5. Suite 64, Calcutta-3
and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh
Lane, Calcutta-6. **Editor : Himansu Roy. Phone : 55-0477**

ECONOMIC AFFAIRS

- Bargadars of Bengal
- Uncertain Input Availability and Working Capital Management
- Economic Condition of Rural Labour in India
- Probes, Prices, and People

Vol. 22, No. 8 AUGUST 1977

Revised Annual Subscription Rates :

India : Rs. 30.00
Foreign : US $ 10.00
Postage : $ 2.00 (by surface)
Single Copy (ordy.) Rs. 2.50

Outstation cheques shall bear Rs. 5.50 extra.
Effective from January 1977.

Sd/ M. Roy
Manager,
Economic Affairs

15 September 1976

TAX PAYERS!

The law requires you to pay income tax and wealth tax on

SELF ASSESSMENT

BEFORE YOU FILE THE RETURN OF YOUR INCOME OR WEALTH

How to compute tax on Self Assessment

- FILL in your return in the appropriate form
- COMPUTE the amount of tax on the total income/net wealth shown in the return at the prescribed rate (s)
- DEDUCT from the amount of such tax, any taxes paid already, namely,
  - —For Income-tax: any tax deducted at source or advance-tax paid
  - —For Wealth-tax: any tax paid already.
- The BALANCE, if a positive figure, is the tax payable by you on Self Assessment.

How and where to pay:

Fill in the relevant challan forms ITNS-166 or ITNS-166A for Income-tax, and WTNS-18 for the Wealth-tax payable, and deposit the amount at any office of the Reserve Bank or any branch of the State Bank/Nationalised Bank authorised to receive payments of Direct Taxes.

Proof of payment:

The triplicate foil of the challan, duly receipted by the deposit office, is required to be attached to your return of income/Wealth.

Caution:

Non-payment of the full amount of tax due on self-assessment entails a PENALTY at 2% of the tax in default for every month of default.

REMEMBER

Your Return of income/Wealth has to be filed by June 30 or within 4 months of the close of the relevant accounting period of your business or profession, whichever is later.

DECLARE YOUR INCOME AND WEALTH FULLY AND CORRECTLY AND PAY THE TAXES PROPERLY.

●

HELP MOBILIZE RESOURCES FOR NATION BUILDING

Issued by:
DIRECTOR OF INSPECTION
(Publications And
Public Relations)
INCOME TAX DEPARTMENT
NEW DELHI

davp 77/78

Contents

Editorial

283 Probes, Prices, and People

Articles

Monit Roy

285 India's Economy at Cross-Roads

Arun K. Mukherjee

289 Bargadars of Bengal

T. V. S. Ramamohan Rao and Arun K. Dua

297 Uncertain Input Availability and Working Capital Management

R. P. Singh

300 Economic Condition of Rural Labour in India

Sujit Kumar Ghosh

311 Choice of Consumption Path and Indian Plans

Feature

319 Price and Employment Indices

ECONOMIC AFFAIRS

Volume 22 August 1977 No. 8

Probes, Prices and People

The Janata Government and its ally the Left Front Government of West Bengal are very much busy, since they have come to power, with probes against the misdeeds of 'caucus', ie, Mrs. Indira Gandhi and her son and their associates during Emergency. In no democratic country such widespread probes, running down crores of rupees of public money and mandays, can be found. For in a democratic world the people's rejection of a party or an individual in a party is the highest permissible punishment in political field. Exhumation is possible in a communist country but not in a democratic country. Democracy concerns with policies and programmes of a party not with the party itself, least with the leader or the 'caucus'. Rejection of the policies and programmes means a change, which is both a protest and progress.

It may be that Janata and its ally are afraid of the revival of of the Congress under the leadership of Mrs. Indira Gandhi in terrific speed and with terrific vigour. For she and her organization have many unassailable performances to their credit. People rejected them for certain gross mistakes, however made under pressing circumstances, but for certain others they have softness for them so much so that they view that it is the Congress which has rejected them, they have not. The Janata's way to contain them is to play the continuous game of discrediting them by the mechanism of probes or public trials for alleged offences. People called in the Janata to work in place of the Congress for greater progress of the country and not for planning for discrediting it. It seems more awkward to the people when they find that the very same Janata which has accepted the principle of letting off all convicts and under-trials for political motivations is prosecuting some others although their acts were also politically motivated.

People demand the progress report of the Janata Government and its ally. What they have to report ? Prices are soaring up. It will soon touch the all-time record leaving the economy again in the grip of inflation to have another critical round of economic chaos. This time it will be more shocking. The earlier inflation was turned into negative inflation through mounting misery of the people bringing in however the longterm gains by way of construction of foreign exchange reserves amounting to about Rs. 3000 crores and a handsome food-stock. The present inflationary spiral is a deliberate making to 'secure' democracy with a sense of satisfaction that it will not gallop for the Congress Government has left behind enough foreign exchange resreves and food-stock to tame it. The resources built up through the sacrifices of the people for future build-up of the nation have become a wealth to fritter away.

The Janata's difficulties are many. It is not a party. It was born in negativism and therefore it has no positive thinking in advance. Result, it can neither go beyond the basic policies of the Congress nor can it accept any sort of emergency to force the labour to go to work and work hard and the Press and judiciary to fall in line with the Government. A stalemate is the net result which logically degenerates into probes. Its ally has different political motivation. It does not like to continue in power. Agitation on communistic line is its source of gradual advance. For it cannot work for the welfare of the people, ie, effort to establish that the capitalistic system can deliver food and freedom to the working class. Nor can it tax the people to raise monetary resources for fear of being anti-people, still further it cannot ask the workers to labour for building up a prosperous 'capitalist' India, Result, it has already begun to abuse the Centre and the Janata as the scion of capitalism. The break away seems to be not far off.

The Janata should learn all these, redefine 'democracy' and act for the progress of the country. This is the modest demand of the people and the primary condition of the survival of the Janata.

India's Economy at Cross-Roads

Monit Roy*

The Janata Government placed its first budget for 1977-78 in Lok Sabha on 17th June. The budget, as it was expected, is a bundle of economic wishes and political promises with a distinct bias for giving extra incentive to free economy in the name of Gandhian trusteeship.

The Janta's political philosophy is "bread with liberty". The two, 'bread' and 'liberty', as a matter of process in an underdeveloped country inclined for a rapid growth are keenly opposite forces. They are tagged as an emotional appeal to masses to make out a case in favour of an economy led by free enterprises. For free enterprise demands 'liberty' to earn, spend, and save. In the Janata hands the time has now come for the public sector to go slow leaving space for expansion of private sector. Another jolt in the existing pattern will come through sudden biasness for creating a vast rural consumption sector and rural development neglecting capital-intensive urban industries.

The Janata seems to have revealed a new dimension in India's inflation-proned economy that it suffers from paucity of demand than supply. The Finance Minister 'proves' this reminding the House that in 1975-76 the economy had no capacity to absorb the production of even 129 million tonnes of foodgrains. He might have conveniently forgotten that the 'negative inflation' after the climax of 30 per cent rise in prices, grand 'buffer stock', and the all-time record foreign exchange reserves were the results of the lack of capacity of lifting the productions internally. It is however a different matter why the 'deprivation' was almost exclusive to rural population.

The Finance Minister is worried over the wholesale price rise by nearly 12 per cent in 1976-77. There is nothing to be surprised in it. The rise in price is an indication that any unplanned relaxation of economy, after a period of ruthless suppression of inflation, will bring in a disaster. Gradual rise in prices is desirable and unavoidable if the economy has to be saved from stagflation. The rise in employment was the result of suppression of inflation than for any other direct cause. Curiously, at this crucial moment, the Finance Minister thinks much in terms of 'redirection' of policies and techniques of planning, etc than of viewing the problems very carefully till the sensitive and critical variables are settled for further manipulations.

---

* Calcutta.

But the Janata seems to be more concerned to unsettle all those which had been settled by the previous Congress Government and feels self-complacence in it. While the Finance Minister will be satisfied if by some "new growth impulses" his Government can succeed to raise the agricultural growth rate to a minimum level of 4 per cent, he is amazed by the 10 per cent industrial growth in 1975-76, instantly correcting himself that it was not the achievement of the previous Congress Government but the result of a number of "fortuitous circumstances". Such things will not pay in economics. Unwittingly however he has listed that his Government has inherited "bumper harvest of 1975-76", "increased domestic production of such critical inputs as fertilisers", "rapid increase in inward remittances" and "strength of India's balance of payments and our reserves". These are the fruits of Emergency. The Janata Government should now consolidate them if it really means that bread is possible with liberty after years of path-finding for it.

Such consolidation is possible where the goals are known and they are clearly and realistically conceived. Public sector normally supplies basic inputs to all sectors, including the agricultural sector. It should not be crippled, should be expanded instead. The Finance Minister has however no hesitation to say that "a large proportion of investible resources available to the public sector" is to be "diverted to agricultural development". His prescription for 'sick' industries is all the more interesting as he suggests that they should be given over to big industries as "an act of social responsibility" leading to more economic concentration.

The Janata Government wants only ten years time to solve the employment problem. If it is a political stunt to make fools the unfortunate poor, we have nothing to say. If it really means business, let it make public its theory and blue-print for an intelligent discussion. The communistic solution of unemployment entails 'hunger' to all and the capitalistic anger of many, given the level of capital efficiency. The middle way is yet to be evolved. That rests little with the Janata which has allergy to any sort of regimentation and likes to live on persuasion and freedom to commit excesses on democracy.

On price front the Finance Minister's only immediate hope is to import essential goods and stop their exports banking upon the foreign exchange reserves, and better public distribution. But how far these national feeding process can be a success and to what limit are an open issue. For the Government has already taken a deliberate policy to create a consumption oriented economy as is the pattern in a developed economy. It has borrowed Rs. 800 crores from the Reserve Bank of India, increased the uncovered budgetary deficit by Rs. 22 crores, released the impounded compulsory deposits, and trapped itself in economic sins of a surplus country in relation to the rest of the world. The replies to all the economic ills are increased production that primarily calls for industrial discipline, least command of political decisions on economic laws, utilization of excess capacity and adjustments of production to demand by sector. These are wanting in the budget.

The Finance Minister's idea behind direct tax proposals is to increase corporate savings, channel more funds into productive investment, accelerate the pace of industrial growth and, at the same time, strengthen the redistribution role that direct taxes must be made to play. With these ends in view he raises the income tax exemption limit to Rs. 10000 crores, compensating the loss by raising the rate of sur-charge on all categories of tax payers, except companies, from 10 per cent to 15 per cent resulting in greater burden on marginally well-offs.

By some marginal revision of wealth tax rates the additional revenue earned will be Rs. 10 crores only. In order to improve mobility of capital the speculators and those who have made black money have been favoured with making easy money by capital gains.

The Finance Minister's approach to indirect tax proposals is so carefully conceived that the necessities of life are not touched. His objects of taxation are motor vehicles, pigments, paints, enamels, vernishes, etc, cigarettes, branded biris (doubling the duty), all hand tools and small tools, weighing machines and weigh bridges, watches, clocks and time-pieces, electric light fittings and polishes for footwear, metals, cars, etc, and acetyline gas. Are these not items which are widely and popularly used ? Yet the Finance Minister is unconvinced that these measures will push up the prices still further.

In order to give the economy a Gandhian look the Finance Minister has given soms concessions to handloom and power industry by way of some exemptions in excise duty. Likewise, the small manufacturer s given a uniform concession of 15 per cent ad valorem in the rate of duty. Concessional rates have also been accorded to TV, tape recorder, and calculators. To help small and cottage match manufacturing units, the existing concession of 55 paise for a gross of match boxes is doubled. Electrical insulating tapes and slotted angles and confectionary articles are also deleted from the list of specific items in the Central Excise. It is also proposed to exempt from excise duty identifyable types of fresh melting scrip cleared from the main steel plant as raw materials for the mini steel plants.

Decision has been made to import watches and reduce the import duty on watch parts and watches from 120 per cent to 50 per cent ad valorem. The import duty on newsprint is to be reduced from 5 per cent to two and half per cent ad valorem. For stimulating industrial growth import of certain selected items of capital goods without scrutiny is allowed from the indigenous angle. On the other side, in order to enable the Indian capital goods industry to face foreign competition more effectively the rates of import duty on certain inputs have been reduced.

A bird's eye view of expenditure pattern shows that total estimated expenditure of Rs. 15568 crores comprises developmental outlay of Rs. 8862 crores (57 per cent), defence outlay of Rs. 2752 crores, interest payment of Rs. 1600 crores, statutory and other transfers to State and Union Territory Governments of Rs. 957 crores and other expenditures of Rs. 1397 crores. Developmental outlay of Rs. 8862 crores comprises Rs. 5315 crores on economic services, Rs. 854 crores on social and community services and Rs. 2682 crores on assistance to State and Union Territory Governments for development purposes as also Rs. 12 crores of plan expenditure included under general services. Of this, Rs. 5790 crores will be under the plan and Rs. 3072 crores outside the plan. Plan provisions include Rs. 3978 crores for Central Plan, Rs. 1645 crores for Central Assistance for State Plan and Rs. 157 crores for Union Territory plan. The Central Plan provision includes substantial alloctions to agriculture (Rs. 525 crores), industry and minerals (Rs. 1939 crores), water and power development (Rs. 210 crores, excluding Rs. 110 crores for the Rural Electrification Corporation programmes in the State sector), transport and communications (Rs. 651 crores) and social and community services (Rs. 597 crores).

The Finance Minister emphasises that his party's social and economic programme lays great importance on rural development. He has moved substantially in that direction. But with what net yields or conflicting results, it is yet to be seen.

Bargadars of Bengal

Arun K. Mukhopadhyay*

The share-cropping tenancy is the result of an inegalitarian land system. In both the major land systems of our country—Zamindary and Rayatwari—this tenancy came into existence in a bigger magnitude. In the situation of institutionalised inequalities in the distribution pattern of landholdings under the Zamindary system, it was natural that those who were totally landless or owners of small plots of land would be forced by their subsistence need to cultivate some leased-in lands. And they could do it as the absentee landlords who wanted to have this land cultivated by others on the basis of crop-sharing arrangement were not very small in number. In most of the cases, this arrangement was oral and the amount of rent was usually 50 per cent of the produce which was paid to the landlords either in cash or kind.

In the Rayatwari areas a good number of the rayats with bigger area of land who were supposed to be cultivators themselves and had direct relation with the government ultimately assumed the position of Zamindars and leased out their lands on the share-cropping basis. In the long run the share-croppers in the Zamindary areas were not virtually different from those in the Rayatwari areas in regard to the terms and conditions of their leased-out lands.

Zamindary System in Bengal

Bengal was the first citadel of the Permanent Settlement introduced by the British in 1793 with their twin objectives of the assured land revenue and the creation of a privileged landed elite class to support their rule. The British conferred permanent property rights of landownership on a small group of people, called 'Zamindars'. It was a 'settlement' between the British Government and Zamindars of Bengal, which subsequently took the shape of a very complex

---

* Deputy Director, National Institute of Community Development, Hyderabad.

The author is grateful to the Directorate of Land Records and Surveys, West Bengal, for supplying some necessary data used here.

multi-tier system with layer upon layer of land-holdings and sub-landholdings from the Zamindars at the top and manual labourers at the bottom, creating a tradition of absolute polarities and hence of conflicting class interests in land. In the words of Karl Marx, "In Bengal they (the British) created a caricature of large-scale English landed estates."[1]

For nearly a century since the introduction of the Permanent Settlement in 1793, no legislative action was taken to ascertain the status and rights of the tenants and under-tenants of Bengal. It was only in 1885 the Bengal Tenancy Act was passed to merely recognise the existence of tenants and under-tenats who were the creations of the Zamindars and Talukdars at the subsequent stages. The Act was amended in 1928 and again in 1938 conferring occupancy rights on those share-coppers who had in their possession land for 12 consecutive years. In practice these legislative measures failed to protect the rights of the majority of tenants and under-tenants, because most of these arrangements being on informal and oral basis, not at all recorded in the land settlement documents, remained outside the framework of law and civil courts. As a result majority of the cultivating community remained in the pool of poverty and distress perpetuated by the exploitative elements in the feudalistic land system. R. C. Datta, in his very penetrating book "Economic History of India —Victorious Age", gave a vivid account of the abject poverty of Bengal peasantry, particularly the agricultural labourers, in 1902 under the impact of the Permanent Settlement.

It can be recalled that in November 1938, the Land Revenue Department of the Government of Bengal appointed a Commission with Sir Francis Floud as Chairman to enquire into the existing land revenue system with special reference to some complex questions[2] pertaining to the effects of the Permanent Settlement on the Bengal peasantry.

In addition to collection of secondary data and materials regarding land system and land revenue that prevailed at that time in Bengal, the Commission administered a questionnaire containing 93 questions for collecting primary information about man, land and rent relations and also about the profit in the agricultural activities of the peasantry. The report of the Commission was published in 1940, which recommended the abolition of Permanent Setttlement and of the intermediaries between the tillers of the soil and the Government.

Status of 'Bargadars'

The share-croppers in Bengal are known as 'bargadars'. The Bengal Tenancy Act of 1855 did not define bargadars as such, but section 2(17) of the Act defined a tenant as "a person who holds land under another person and is or, but for a special contract, would be liable to payment for that land to that person." But the Bengal Tenancy Amendment Act 1928, said "Provided that a person, who under the system locally known as 'Adhi', 'Barga' or 'Bhag' cultivates the land of another person, is not a tenant unless (i) such person has expressly admitted to be a tenant by his landlord in any document executed by him or executed in his favour and accepted by him, or (ii) he has been or is held by a civil court, to be tenant".[3] Thus the 'bargadars' were defined by implication of this amendment. They did not have any tenancy right, but the amendment of 1938 conferred occupancy rights on those tenants and under-tenants who had in their possession land for 12 consecutive years. In effect these legislative measures, as already pointed out, did not work in a meaningful manner. The Floud Commission thus observed: "The rapid increase in the number of bargadars is one of the most disquieting features of the present times; and it is an indication of the extent to which the hereditary ryots are losing their strategy and being depressed to a lower standard of living. It is true that the successive provision of Tenancy Acts have endowed the ryots with the practical ownership of the land. But a large and increasing population of the actual cultivators have no part of the elements of ownership, no protection againt excessive rents and no security of tenure."[4]

The position is stated clearly in Table 1.

Table 1

Proportion of Bargadars, 1939-40

Total Area enquired into (Acres)	Transferred During 1928-40 (Acres)	Transferred Area cultivated By Purchasers' family	 By Bargadars	 By Labourers
85,470.04	5,923.35	2,252.11 (38%)	1,852.29 (31%)	341.40 (5.7%)

After the computation of the pre-partition data the area of land cultivated by bargadars who fell in all the Bengal districts was that in 1940 the bargadars cultivated 22.7 per cent of the total land. The following table gives the district-wise break-up.

Table 2

Percentage of Land Cultivated by Bargadars in 1939-1940

Districts	Percentage
Bankura	29.2
Birbhum	24.8
Burdwan	25.2
West Dinajpur	14.5
Hooghly	30.5
Jalpaiguri	25.9
Howrah	23.4
Malda	9.6
Midnapore	17.1
Murshidabad	25.8
Nadia	24.1
24 Parganas	22.3
Average	22.7

In the meanwhile, in view of abject poverty due to meagre or no substantial source of income and their perpetual exploitation particularly in the form of usury, Mr. A. K. Fazlul Haque, the then Chief Minister of Bengal, set up in 1937 "Debt Conciliation Boards" at each circle level for scaling down debts which were mounting far beyond proportions, and its ultimate liquidation wherever possible. This measure gave some relief to the 'bargadars' for the time being so far their debt burden was concerned. But the fundamental question of abolition of this inferior tenancy, i.e. 'bargadari' system was not taken afore. One of the important recommendations of the Floud Commission (1940) being to confer ownership rights on the sub-tenants or bargadars was not adopted. The plight of the bargadars did not draw active attention of the policy-makers till the measures of reforms taken after our Independence.

Bargadars after Independence

In pursuance of a somewhat common pattern of land reform activity all over India, legislative measures were adopted in West Bengal in early fifties in order to eliminate the remnants of feudalism in land relations and restructure it in the interests of the actual tillers of the soil. It was the West Bengal Land Reforms Act of 1955 which provided the protection of the interests of the bargadars. Section 16(1) of the Act says thus: "The produce of any land cultivated by a bargadar shall be divided as between the bargadar and the person whose land he cultivates (a) in the proportion of 50:50 in the case where plough, cattle, manure and seeds necessary for cultivation supplied by the person owning land, and (b) in the proportion of 60 : 40 in all other cases." In the West Bengal Land Reforms (Amendment) Act 1970, this share of 60 : 40 was raised at 75 : 25 as between the bargadars and the owners. Bargadar's right over the cultivation of the land was further strengthened by introducing in the said amended Act the provision for heritability.

Let us now estimate the incidence of share-cropping of West Bengal's agrarian economy at the time of enforcement of the West Bengal Land Reforms Act of 1955. Though dependable data are not available, yet, on a rough estimate, bargadars at that time constituted more than 30 per cent of the total agricultural labour force, who cultivate roughly more than 40 per cent of the total arable land in the State. There were approximately 24 to 25 lakhs of bargadars in the State of which 8 to 9 lakhs had their names recorded in the Records of Rights. Even after almost two decades of efforts intended to reduce the weight of this inferior tenancy of share-cropping, the picture is not at all different. The Task Force on Agrarian Relations (1973) observed that "an analysis of the situation in West Bengal where share-cropping is prevalent on a very large scale shows that out of an estimated number of 2.2 million share-croppes, only 0.8 million have been recorded".[5]

It naturally implies that the majority of share-croppers fall outside the legal framework and their rights on land cannot be normally established or protected, however strong the legal provision in favour of share-croppers might be under the recent amendment of the State's Land Reforms Act of 1955. It has failed to check the outright and large-scale eviction of the share-croppers from land by the landlords who also have taken the advantage of the right of resumption for self-cultivation as provided in the West Bengal Estate Acquisition Act of 1953. Thus, it is the urgent duty of the Government to arrange the rapid recording of rights of bargadars against eviction, land bondage, rack-renting, and other forms of exploitation by the landlord and provide opportunities to get institutional credit and other input facilities for their agricultural operations. Although some nationalised banks have advanced to finance some recorded bargadars, the coverage is very slow and inadequate. The extent of banking operations among share-croppers has been mentioned by the Task Force when it says about West Bengal : "The nationalised banks have financed only 111 poor share-croppers for one crop season of 1971-72. The existing financial institutions show a definite bias in favour of the viable and efficiently managed farm units. The basic reality in the situation to day is that the share-croppers are very largely at the mercy of their land-owners for their sheer existence. In such a state of utter dependency, it is futile to expect any betterment of their conditions merely through legislative and administrative measure. The goodwill of the legislators and the sympathy of the administrators could not carry the share-croppers far without massive doses of financial support from institutional sources or directly from Government."[6]

Bargadars and Productivity

Let us now deal with another aspect of share-croppers in West Bengal. There is usually an assumption that share-croppers are not economically as efficient as the owner-cultivators. But a number of studies in West Bengal on the economy of share-croppers shows that it is nor true. The Farm Management Studies on West Bengal in 1954-55, a study of some villages in the district of Hooghly, West Bengal by Asok Rudra (1973) and the author's study[8] in the district of Midnapore, West Bengal (1965), indicate that from the point of view of economic efficiency, there are not very marked differences in the input-output pattern of owner-operated farms and share-cropper operated farms and both run in the same way. In the last study mentioned above, it has been observed additionally that the share-croppers who have no means of livelihood other than their leased-in land have shown better performance than those who have additional source of income inside or outside agriculture. This inter-farm variation in performance (on share-cropping basis) is attributable to two factors ; (a) the question of maintaining the entire family out of the income from this leased-in land strongly induces more efficient cultivation through intensive labour employment to get high yield, and (b) the share-croppers (most of their arrangements are not recorded and hence outside the purview of legal protection by tenancy law) have to operate under the constant threat that poor yield will result in the change of hand of the share-croppers. Accordingly, in regard to the adoption of innovations, both types of farms have demonstrated the same pattern. A study (1972) by the Agriculture Department of West Bengal has concluded that it is not merely the right on land that is important for adoption of improved practices, but the extent to which the farmer depends on agriculture as his means of livelihood definitely has bearing on his adoption behaviour. Thus it is found that even amongst the purely share-cropping farmers, about the same number of persons who held agriculture as their main occupation were also adopter of chemical fertilizers.

Bargadars and Institutional Finance

As already mentioned, from the beginning of the present decade, some nationalised banks in West Bengal have been extending agricultural credit to the recorded share-croppers in a limited way. A recent micro study of "Bargadars and Institutional Finances"[10] by the West Bengal Directorate of Land Records and Surveys summarised thus the impact of bank loan on the bargadars :

(a) Bargadars have increased paddy production by 77 per cent by raising an additional high-yielding boro crop.

(b) Bargadars have reduced the burden of long outstanding private loan by 10 per cent which was previously mounting cumulatively.

(c) Bargadars have increased their subsistence expenditure by more than 70 per cent ensuring a better living.

(d) Bargadars will be able to repay the entire amount of outstanding private loans in the coming years if they are favoured with bank loans in the coming years also.

(e) It is apparently clear that the bargadars will be able in a position to do away with the bank loan also at the end of the 15th year if the present policy of financing them through banks continues.

(f) Being free from the bondage of all sorts of loans, the bargadars will be in a position to raise their subsistence level rapidly after the 15th year.

(g) If bank loan is extended to all the poor cultivators of the State, it will not only revolutionise the standard of their living and boost up rural economy in an unprecedented scale, but will also greatly accelerate the State's endeavour to attain self-sufficiency in foodgrains in a short period.

In view of this hopeful developments in the field of institutional finance (bank finance particularly) and its judicious use, we may suggest the following steps to the Government of West Bengal to adopt immediately and with all sincerity :—

(a) To neutralise totally the bargadar's position of economic dependence on the landowning mahajans by arranging and supervising the bank credit to them ;

(b) To eliminate the sense of fear of eviction among the bargadars by enforcing immediately and vigorously the machinery at the ground level to record the rights of bargadars and to see that the legitimate share in produce goes to them smoothly.

(c) To ensure these achievements to encourage the organisation of share-croppers to establish their rights on land.

The solution to the problems of unrecorded bargadars, being so acute, has been aptly pointed out by the Task Force on Agrarian Relations when it asserts : "In our view a certain degree of politicisation of the poor peasantry on militant lines is a prerequisite for any successful legislative-administrative action for conferring rights and privileges on them. Otherwise, there is always the possibility of such conferment of rights not only becoming illusory but also turning out to be positively harmful as the vast majority of the beneficiaries would succumb to the pressure of the landowners and would relinquish their rights and privileges either voluntary or through open and naked coercion. Even reform will not succeed unless it is accompanied by massive economic support to share-croppers through institutional sources".[11]

Notes and References

1. Karl Marx, Capital, Vol. III, p. 328 (FLP, Moscow, 1959)
2. The questions were : "Is it practicable and advisable for government to acquire all the superior interests in agricultural land so as to bring the actual cultivators into the position of tenants' holding directly under Governments ? If so, what would it be likely to take and what would be its probable consequences on the economic, financial, administrative and social structure of the province ? Would it be practicable to maintain the actual cultivators in the position of the direct tenants of government, and if so by what method and what would be the implication of such a proposal ?" (Report of The Land Revenue Commission, 1940).
3. The Bengal Tenancy Act of 1885 as amended in 1928 and 1938, p.5.
4. Report of the land Revenue Commission, 1940, Government of Bengal, Vol. I, pp. 38-39.
5. Report of the Task Force on Agrarian Relations, Planning Commission, 1973, p. 26.
6. Ibid, p. 28.
7. A. Chakravarty and A. Rudra, Economic Effects of Tenancy : Some Negative Results, Economic & Political Weekly, July 14, 1973.
8. Arun Mukhopadhyay, Agricultural Extension : A Field Study, 1971, p. 141. Minerva Associates, Calcutta.
9. Government of West Bengal, Summary Findings of Socio-economic Studies, 1972, p.3. Socio-Economic and Evaluation Branch, Deptt. of Agriculture.
10. Government of West Bengal, Bargadars and Institutional Finance, 1972, pp. 13 and 27.
11. The Task Force, Ibid, pp. 25-26.

Uncertain Input Availability and Working Capital Management

T. V. S. Ramamohan Rao* and Arun K. Dua*

I. Introduction

Since our economy has been experiencing all round shortages of raw materials, and increasing prices of acquiring them, there can be a general tendency among the entrepreneurs within the corporate sector to inflate inventory holding. Since inventories are often the major part of working capital and often constitute a steady part of it the latter also tends to be inflated. For over a decade the Reserve Bank of India has been making frantic efforts to bring about the much needed financial discipline. Most recently the Tandon Committee even recommended rigid enforcement of norms for inventory, receivables and bank credit.

The response from the industrial circles was bitter. They contend that the norms are arbitrary and do not take into account the practical exigencies of individual firm situations and cannot therefore be realistic. Most of them feel that the credit starvation has forced them to cut production and eventual sickness of most of the enterprises cannot be avoided if the same financial stringency continues.

Even seasoned observers of the decisions of financial managers are at a loss to understand the anamoly. There is clearly some missing link in both viewpoints which should be clearly brought into the forefront if we wish to make an effort to rescue the situation. However, neither side seems to be making efforts to clearly understand the premises on which the conclusions of the other group are founded.

What we wish to do in this study is to use conventional econometric analysis to get a better insight into the possible origins of disagreement. Only by doing so can we hope to attempt the next step of developing a compromise solution.

---

* Indian Institute of Technology, Kanpur, U.P.

II. The Approach

The quantum of working capital required would be predominantly determined by the technological requirements and trading conventions. We may consider the major determinants to be of three kinds: (1) those affecting the procurement of raw materials, (2) those relating to the technical aspects of production, and (3) those influencing the sale and recovery of money committed in production.

Let us now turn to a brief description of the quantification of each of these variables: (1) the technological requirements are mainly determined by the roundaboutness of the process of production as reflected in the capital intensity. (2) Next suppose a firm wishes to increase its volume of production with technology unchanged then there is an increase in the working capital requirement.[1] If, however, an increase in production evokes a larger proportionate change in working capital then it may be concluded that working capital requirements are geared to a higher target rate of production instead. (3) Consider the marketing side of the problem next. If the market is slack and the demand is low then there will be an unintended accumulation of final goods. Hence the lagged sales variable is significant. In addition, a slack demand and/or a desire to accelerate growth of sales can make the firm extend credit beyond its normal trading conventions, inflating the demand for working capital.

Uncertainties can have their influence on working capital decisions. Consider the case of raw material inventory again. The major reason for the variation in the stocks held is the speculative build-up of raw material inventory whenever there are expectations of shortages and/or an increase in their prices. We feel that the risks involved in the acquisition of variable factors of production can be best represented by the variation over time of the average variable costs of production.

We examined the influence of these variables sequentially by using regression methods to identify the major influences on the variations in working capital.

III. The Data Base

For illustrative purposes we initially picked a small sample of prominent firms in the corporate sector and the requisite data are obtained from the stock exchange directory for the period 1962-1974.

---

[1] If the increase is contemplated by an improvement in technology, then the increased capital intensity also adds to working capital requirement.

We purposely chose the sample so as to include firms with distinct inter and intra firm variations within a few industries.

The ultimate sample of firms consists of: Alkali and Chemicals Corporation, Larsen and Taubro, Philips India, Escorts. Metal Box, Voltas, Britannia Biscuits, and J. K. Chemicals.

IV. Empirical Findings

(1) The working capital requirement is determined by P_t and/or S_{t-1} in all cases. Almost invariably P_t is the more important variable and S_{t-1} becomes insignificant when both are combined in the same regression,

(2) The elasticity of WC_t w.r. to P_t is consistently less than unity,

(3) The risk variable (AVC_t/AVC_{t-1}) is significant only in the case of Larsen and Taubro. It remained insignificant in all other cases. There is no evidence of excessive build up of raw material inventory,

(4) S_{t-1} and receivables are the major determinants in the case of Escorts, Britannia Biscuits, and J. K. Chemicals. In the case of Philips India, Metal Box, and Voltas the receivables variable alone is not statistically significant. For Alkali and Chemicals, and Larsen and Taubro the receivables variable alone is significant.

From these findings it appears that the more serious problem is not one of excessive inventory of raw material. Instead, the general recessionary conditions compel the firms to extend better credit terms and hold larger stocks of final goods inventory. This makes the receivables larger also. All this requires some source of finance. But the bank credit limits made this financing all the more difficult. This is precisely the complaint of the corporate sector.

Hence the blame put on the corporate sector is unconvincing. If we cannot do much to improve the aggregate demand conditions and pull the industrial sector out of the recessionary trends we ought to at least make finances available for sustenance. We cannot automatically have the best of both the worlds. Hard Policy choices are in order if we wish to maintain healthy corporate growth.

Economic Condition of Rural Labour in India

R. P. Singh*

The major problems of agricultural labour are mainly of social and economic in nature. The social problems are governed largely by traditional social values handed down from generation to generation. As Justice Ranade has aptly observed that "Custom, contract and tradition rather than competition determine their socio-economic pattern of life—social stratification in rural areas is closely associated with land ownership caste. Big land owners are at the apex exercising economic power and influencing social action as per their interest. Most of the wage-paid labour specially agricultural labour is assigned a lower rung in the rural hierarchy". Economic problem of the agricultural labour are mainly due to low wages, short duration of employment period or intermittant unemployment and lack of opportunities makes the agricultural labour in a stagnating position. Thus, it may be said that the problems of farm labour are manifold and are inextricably mingled with the problems of rural economy, which are basically low income, low productivity and lack of continuous gainful employment. The number of farm labour changes mainly due to variation in population, land reform policies, administrative relief/welfare measures, opening up of new avenue of employment through public work and industrial development, migration and transfer of proprietory rights.

Agricultural labourers are the weakest among the weaker section of the rural population. Even among the agricultural labourers, the condition of poor landless labourers are most deplorable. It has been observed that the landless labourers constitute about 27 per cent of the total number of workers in India in 1971. There number has been increasing continuously. It has been estimated that the average annual rate of growth in the number of agricultural laboures was

---

* Research Officer, Agro-Economic Research Centre, University of Allahabad, Allahabad.

1.21 per cent between 1931 and 1951 and 3.68 per cent between 1951 and 1971. In absolute terms the number of agricultural labourers was 17.26 million in 1901 which increased to 47.48 miliion by 1971 while the number of agricultural labourers was 31.59 million in 1961. This shows an average annual rate of growth of population of about 5.11 per cent during 1961-71. The N.S.S. report number 133 (1963-64) shows that 38.63 per cent of the agricultural labourers had no land at all. The figures for cultivators according to 1971 census of India was 78.17 million in 1971, 99.52 million in 1961 and 59.73 million in 1951. The major concentration of agricultural labourers is to be found in the States of Andhra Pradesh, Bihar, Maharashtra, U.P., Tamil Nadu and Madhya Pradesh where agricultural labourers constitute more than 50 per cent of total workers. Orissa and West Bengal are the other two states having large number of agricultural labourers but Bihar tops the list of agricultural labourers.

The new agricultural technology in the form of high-yielding varieties and modern inputs have created the additional employment in agricultural sector and subsequently increaased the income also. But still over 220 millon people in the country are below the minimum consumption. The possible reasons of this abject poverty are identified as open unemployment, underemployment and low resource base of a very large number of producers in the agricultural sector. The urban poor are mainly an over flow of the rural poor. Unemployment is an acute social problem which has now become more complex due to mixed economy and increasing rate of population.

In most of the places, the land holdings of the agricoutural labourers is too small that in the condition of limited avenues of employment in the rural area it becomes difficult for them to get adequate income for meeting their requirement and they are forced to take loan which leads to more exploitation of rural labourers and inhuman treatment by money lenders and big land owners. The exploitation of labourers is mainly in the form of depressed wage rates, employment as casual labourers, high rates of interest charged on loans which force them to work as bonded labour and to lead a life of serfdom from generation to generation.

Categories of Labourers

Generally the labourers have been classified into two broad groups, namely, casual and attached labourers. But they can be divided into two other categories namely 'free' and 'unfree' labour. The clear distinction between these two categories of labourers is very essential for realistic analysis of the labour market in the agricultural sector. Daniel and Alice Thorner has differentiated free and unfree labour on the basis of arrangement for contracts and their bargaining power. According to him free labourers are those "who are able to accept or reject the conditions and wages offered by the employer "while unfree labourers are those "whose bargaining power is virtually non existent, or has been surrendered" such a labourer does not possess the right or has yielded the right to refuse to work under the terms set by his master. Bonded labourers are tied to his master's needs due to custom and compulsion or specific obligation. They can neither quit nor take up work for another master without first receiving permission. He again classifies the free labourers into five sub-groups according to the length of the period of service and the unfree labourers into three sub-groups. These seven classes of labour are namely (i) yearly or for more than one year, (ii) seasonal, (iii) short term jobs lasting either for a five days or for a single operation, (iv) daily labour, (v) full time service on an annual or more than annual basis in a dependent status, (vi) 'beck-and-call' where labourers work for a single master and can seek other employment at the time of no work on the employer's farm, (vii) forced labour who have to perform a certain number of days of work each for their landlords at low, nominal, or even no wage.

Free labourers are known by different names in different areas as '*Palikapu*' a kind of chief permanent farm servant in Andhra, '*Chahas*' in Broach and Kaira district of Maharashtra, '*Saldar*' in Khandesh and Berar, '*Bhagia*' a kind of share cropper in Gujarat '*Panivals*' in Quilon district of Kerala State, '*Dinacooli*', '*Dinmajur*' in Tanjore district of Madras, Banglore district of Mysore, and Jaunpur district in U.P., '*Dhers*' or '*Holevas*' in South Kanara. In Mysore a form of debt bondage labour is known as '*Jeeta*'. A group of workers in the costal zones is locally known as '*Kothia*', '*Kamias*' in Bihar, 'Hali', system in Surat and '*Chanamalu*' in Guntur district of Andhra Pradeh. There is one more category of labourer known as 'Veth' or, 'begar' in U.P.

Employment

The employment of agricultural labour in different parts of the country shows a wide variation. As estimated by Aulukh and Bolwinder Singh gainful employment of an adult labourer in Punjab

(Amritsar) was 186 days of which for about 117 days (63 per cent) he got employment in agricultural sector, for 29 days (16 per cent) in non-agricultural sector and for 40 days self-employment. Sex-wise employment shows that a casual male adult, female and child labourers were busy for 369.2 days, 341.7 days, and 264.0 days respectivsly while permanent adult male, child and female *'sepers'* (tenant share croppers) were employed for days, 227 days and 230 days respectively. The employment condition of labourers in Western U.P. was relatively low than in Punjab. In Western U.P. employment of a male, female and child agricultural labourer was 300 days, 227 days and 230 days respectively (J. S. Garg). The employment position in Eastern U.P. Block Saidpur, District Ghazipur was very low. An average worker got employment for 126 days in farming varying from 63 to 177 days between different categories of household. The employment condition in case of sub-marginal and marginal farmers was estimated as 571 to 327 days per acre respectively as against 200 days for all farms. This shows that in case of sub-marginal and marginal farmers there were some over-employment also. It was also found that on an average a worker was gainfully employed for 63 per cent of the total working days. The employment in agricultural and non-agricultural sector accounted for 73 and 27 per cent of the total employment days. There was acute unemployment in case of landless agricultural labourers whose main source of earning was employment. They were unemployed for about 44 per cent of the total working days. It was found that 12 per cent of the total workers were employed through out the year (300 days as full employment) while little more than half of the workers got gainful employment up to six months only. The employment of workers in mainly farming sector for adult male and adult females was 97 and 120 days respectively (Singh, R. P. and Shukla, P. C.). The employment condition in Purnea district of North Bihar shows that an average casual labour was employed for 168 days consisting of 161 days in farming and only 7 days in non-farm activities. Sex-wise employment of an adult male casual labourer was 204 days (187 days farm employment and 17 days non-farm employment) while an adult female casual labourer was employed for 145 days only and that too in farming activities. The employment of a child worker was 106 days in the agricultural sector only. This shows that an adult male, adult female and child labourers remained unemployed for 96 days, 155 days and 194 days even if the norm of 300 days is considered as full employment (65 days were excluded from the total days as 52 Sundays and 13 holidays in a year) (Radhey Shyam & K. N. Thapliyal).

Wages

Wages of an agricultural labourers have significantly changed with the advent of new agricultural technology, The change in the real wages of agricultural labourers during 1960-61 to 1969-70 shows that there was a very marginal increase in Punjab (0.43 per cent) followed by Kerala (0.24 per cent), and U.P. (0.01 per cent) while in other states namely Andhra Pradesh, Assam, Gujarat, M. P., Mysore, Orissa and Tamil Nadu it decreased by 0.06, 0.25, 0.24, 0.30, 0.33, 0.25 and 0.04 per cent respectively. Real wage rates in agriculture in the year of 1969-70 was highest in Punjab (Rs. 3.24) followed by Kerala (Rs. 2.31), Assam (Rs. 2.04), Gujarat (Rs. 1.73), Andhra Pradesh (Rs. 1.40), Tamil Nadu (Rs. 1.39), Bihar and Mysore (Rs. 1.34), U.P. (Rs. 1.32), M.P. (Rs. 1.02) and Orissa (Rs. 1.01). Though there was considerable increase in the money wages of agricultural labourers during 1961-61 to 1969-70, the highest increase was noted in Punjab where money wages of agricultural labourers increased from Rs. 2.81 to Rs. 6.34 during the same period, while next in order was Kerala where money wages increased from Rs. 2.10 to Rs. 4.67. In other States also money wages increased to a considerable extent (Directorate Ministry of Agriculture and Irrigation, Government of India). Wages of agricultural labourers estimated by some studies conducted at micro level during different areas of the country shows a wide variation. Average daily wage rate for casual agricultural labourers for 15 districts (Punjab and Haryana) increased by about 89 per cent between 1960-61 and 1967-68. But the consumer retail price index number (general) for agricultural labourers regularly issued by the Labour Bureau of the Government of India shows that during the same period prices (for agricultural labourers went up by 93 per cent in Punjab (including Haryana). The real wages had reduced. Average daily agricultural wage rate for a casual male field labour in five districts of Haryana as estimated by Pranab Bardhan (A/D/C Teaching Forum Development Process and Planning Number July 8, 1971) was Rs. 3·41 in Hissar followed by Mohinder Garh (Rs. 3.14), Ambala (Rs. 2.43), Gurgaon (Rs. 2.30) and Karnal (Rs. 1.80) in 1960-61 which increased to Rs. 5.44, Rs. 3.40, Rs. 4.55, Rs. 3.92 and Rs. 3.97 per day in respective areas in 1967-68.

According to an estimate made by J. S. Garg the monthly wage rate in Western U.P. for an agricultural male labourer is Rs. 61 plus two times meal in winter and three meals in summer while for female labourers the same is Rs. 51 plus one time meal in both seasons and for child Rs. 41 plus two times meals in winter and three meals in summer. The method of wage for different crops is quite different. For harvesting and threshing of paddy the labourers are paid all the 'Pual' and in case of maize full green fodder. In case of sugarcane a labourer is provided fully with a quantity of 'Agola' (top of cane) and one or two canes while in case of wheat one 'Pooli' (bundles) out of 25 pooli (bundles) given. In case of threshing of wheat by power thresher labourers are paid 6 kg. of wheat plus one meal. The daily wage rate of agricultural labourers is quite low in eastern U.P. as compared to western U.P. and Punjab. According to an estimate of daily wages of agricultural labourers in Saidpur Block of Ghazipur district in Eastern U.P. (Singh, R. P. and Shukla, P. C.) the average daily wage rate of a casual labourer is Rs. 31.7 (Rs. 2.17 in cash and Rs. 1.00 in kind) as against Rs. 3.20 (Rs. 1.50 in cash and Rs. 1.70 in kind) for attached labourers. The wages of casual male labourers are higher i.e., Rs. 4.00 as compared to female (Rs. 3.00) and child labourers (Rs. 2.50). Female labourers are not engaged as attached workers. Daily wage rate of attached male labourers is Rs. 3.70 while for attached child labourer it was Rs. 2.70 only. Wages for harvesting and threshing operation were higher than for other operations. On an average daily wage rate for harvesting and threshing operations was Rs. 4.66 while for ploughing it was Rs. 4.20 and for other operations Rs. 3.66 only. The average daily wage rate for agricultural labourers was very low in Purnea district of North Bihar despite the area being agriculturally progressive. According to an estimate made by Radhey Shyam and K. N. Thapliyal average daily wage of a casual labourer was Rs. 1.97. It was Rs. 2.23 (68 per cent in kind and 23.2 per cent in cash) for a casual adult male labourer and Rs. 1.72 for casual adult female. A casual child labourer was paid Rs. 1.54 per day only. Daily wage of permanent labourers was more i.e., Rs. 1.51 than that of casual labourers (Rs. 1.97). An adult male attached labourer was paid Rs. 1.72 while child attached labourer was paid Rs. 1.19 only.

Earning and Saving

The economic condition of agricultural labourers in the country is very deplorable which can be seen from their earning. Some enquiries conducted into the condition of agricultural labourers in the year of 1950-51, 1956-57 and 1963-64 show that the average annual income of an agricultural labour household in India was Rs. 447.00, Rs. 437.57 and Rs. 660.19 respectively. The average size of family consisted of 4.47 members in 1963-64. The earnings of agricultural labourers show an increase of 51 per cent during this period while during the same period the income from cultivation of land per household increased by 41.5 per cent (from 30 to 42 per cent) ; income from wage paid for manual employment increased by 53.7 per cent (from Rs. 354.5 to Rs. 544.8) and income from other sources increased by 53.7 per cent (from Rs. 354 5 to Rs. 544.8) and income from other sources increased by 37.6 per cent (from Rs. 52.9 to Rs. 72.8). But this increase in income of labour household was only 25 per cent in real terms if the increase in money income is deflated by consumer price index (food) for working class with 1949 as base year. Twenty-fifth round of the N.S.S. shows that per capita annual income which is a better indicator of the relative income position of the households shows that Punjab enjoys the highest income of Rs. 485 followed by Gujarat (Rs. 392), Rajasthan (Rs. 369) and U.P. (Rs. 341). Per capita incomes of agricultural workers in Orissa and Tamil Nadu are lowest i.e., Rs. 255 and Rs. 249 respectively, If the per capita income of Punjab is taken as 100 then the inter state variation in the relative income position of agricultural labour households is more clear. On the basis of per capita income in Punjab the index in other States stands as follows : Gujarat (80.8), Rajasthan (76), U.P. (70.3), M.P. and Maharashtra (60), Mysore (54), Orissa (53) and Tamil Nadu (51.3) (Pandey, S.M.).

It is also interesting to note that per capita income of a landless labourer in Bankura district during 1972 was 37 paise according to a survey made by the Government of West Bengal. But again the second survey conducted by the same Government estimated only 33 paise.

The income and saving of the agricultural labourer estimated by various studies conducted by different institution at micro level show that in Amritsar district of Punjab an adult casual male labourer earned Rs. 1,914 per year (Rs. 1,178 from agricultural activities, Rs. 210 from non-agricultural and Rs. 526 from self employment) while an adult female earned Rs. 507 only (Rs. 260 from agricultural, Rs. 62 from non-agricultural sources and Rs. 185 from self employment). A male child earned relatively more i.e., Rs. 967 (Rs. 690 from agricultural, Rs. 112 from non-agricultural sources and Rs. 65 from self-employment) than a adul female labourer (Aulukh, A.S. and Balwinder Singh). In Haryana, the adjoining State of Punjab, 10.24 and 28.62 per cent of people were living below minimum level of Rs. 15 per month per capita at 1960-61 prices in 1964-65 and 1967-68 respectively (Sharma, M. L., Punia, P. K. and Sisodia, G. S.). In the western district (Meerut) of U.P. annual income of an average landless labour household was Rs. 4,356.60 or Rs. 363 per month (J. S. Garg). In the eastern districts of U. P. income of landless labour household was relatively low than income in the western U.P. Per household it was estimated at Rs. 3,501.59 per annum or Rs. 291.80 per month. (Radhey Shyam and Gupta, D. P.). In Saidpur Block of Ghazipur district the annual net income of landless agricultural labour was estimated at Rs. 79.50 per worker or Rs. 6.62 per month or 22 paise per day (Singh R. P. and Shukla, P. C.). In an agriculturally progressive area of Purnea district of north Bihar per capita income was estimated at Rs. 243.95 per year or Rs. 20.33 per month which comes to 68 paise per day (Radhey Shyam and Thapliyal, K. N.). In another district of eastern U.P.—Gorakhpur—per capita income of a landless labour was estimated at Rs. 1.08. According to a survey conducted in six mono cropped districts of West Bengal average per capita daily income of a member of the household of an agricultural worker was around 50 paise which is barely sufficient for an intake of 480 calorie per day at the average price level of April-May 1974 around Calcutta.

Consumption

There was a quite diversity in the consumption pattern of agricultural labourers in different areas of the country. According to the report of the 25th round N.S.S. monthly consumption expenditure of an average labour household was highest i.e., Rs. 188 in Punjab followed by Rs. 143 in Gujarat Rs. 122 in Rajasthan, Rs. 118 in Maharashtra, Rs. 117 in U.P. Rs. 113 in Mysore, Rs. 108 in Tamil Nadu, Rs. 98 in M.P. and Rs. 87 only in Orissa which on an average per capita daily expenditure comes to Rs. 1.23 in Punjab followed by Rs. 1.07 in Rajasthan, Rs. 1.00 in Gujarat, 90 paise in Maharashtra, U.P. and Mysore, 83 paise in M.P. and Tamil Nadu and 80 paise in Orissa.

This variation in consumption expenditure is more clear from the findings of some other studies made at micro level. As estimated by a study in Purnea district of north Bihar per capita per day consumption expenditure of landless agricultural labourers was 71 paise only.

Indebtedness

The majority of agricultural labour households were heavily indebted mainly due to their low earnings. As has been estimated by the Second Agricultural Labour Enquiry Committee about 64 per cent of the total households were indebted to the extent of Rs. 138 in 1956-57 while in 1964-65 the percentage of indebted labour households to total households decreased to 60.6 percent but average amount of debt per indebted household increased to the extent of Rs. 243.87. In the year of 1956-57 highest percentage of labour households was indebted in Punjab and Haryana (79%) followed by Maharastra and Mysore (72%), Tamil Nadu (72.3%), Kerala (70.1%), West Bengal (69.2%), Bihar (68.5%), Andhra Pradesh (66.2%), Rajasthan (61.6%), Orissa (59.1%), Gujarat (46.8%), M.P. (47.3%) and Assam (29.9%). But the percentage of indebted households in 1964-65 decreased in U.P. to (71.5), West Bengal (52%), Orissa (47.1%), A.P. (64.8%), Tamil Nadu (59.8%), Punjab—Haryana (73.3%) while in other States namely M.P., Bihar, Assam and Rajasthan percentages of indebted households increased to 59.8 per cent, 70.7 per cent, 43.5 per cent, and 76.6 per cent respectively.

Average amount of debt per indebted household in 1956-57 was highest in Punjab-Haryana (Rs. 353) followed by Rajasthan (352), U.P. (Rs. 197), Mysore (Rs. 164), A.P. (Rs. 154), Bihar (Rs. 142), Tamil Nadu (Rs. 124). M.P. (Rs. 108). Gujarat (Rs. 101), Kerala (Rs. 79), Orissa (Rs. 67), West Bengal (Rs. 56) and Assam (Rs. 35) while in 1964-65 it increased to Rs. 628.69 in Haryana-Punjab Rs. 584.89 in Rajasthan Rs. 311.69 in Mysore, Rs. 294.15 in Gujarat, Rs. 279.61 in U.P. Rs. 248.54 in Tamil Nadu, Rs. 238.39 in M.P. Rs. 212.07 in Bihar, Rs. 167.40 in Maharashtra, Rs. 154.66 in Orissa, Rs. 126.61 in Kerala Rs. 118.96 in Assam and Rs. 98.59 in West Bengal.

All this shows that despite the decrease in the number of indebted households incidence of debt increased in all the States of the country. The extent of indebtedness is supported by some recent micro studies conducted in Punjab, U.P. and Bihar. In Amritsar district of Punjab about 62 per cent of the landless labourers were indebted and average amount of debt per household was estimated at Rs. 1,165.62 (Aulukh, H. S. and Balwindar Singh) while in the Purnea district of north Bihar per indebted household average amount of debt was estimated at 352.23 per year and 75 per cent of the total labour households were indebted.

Thus, it can be said the majority of the labour households have low earnings and are highly indebted. Not only this but the amount of debt is also increasing day by day. The low level of earning forced them to live below the level of minimum standard of living. This ultimately forced them to take more loan at higher rate of interest for meeting their consumption expenditure and on the other side leaves little saving in limited cases for further investment or repaying the past debt. This compels them to remain in the clutches of village money lenders and big landlords and get low wages in the absence of bargaining capacity. They become unable to move in the other occupation due to certain bondage with the money lenders or big land owners from whom they take loan. Their whole family remains in the clutches of money lenders and earns low earning resulting poor nourishment which badly affects their physical efficiency for hard work. All these interdependent factors are mainly influenced by the low level of earnings of the rural labour households which deteriorates the economic condition as well as social status in the society and increases the disparity and dissatisfaction in the country. Therefore, this segment of the society, who has no other avenues of employment, needs special care. Though a number of attempts have been made to improve their socio-economic conditions through various legislative measures and also through various independent organisations but all these have provided very little relief to them.

In this connection it may not be out of place to mention that mere legislation is not able to solve the purpose but instead of lip service some concerete steps have to be taken up for the welfare of this segment of the society. Since it is also very difficult for the Government to meet the additional financial requirement to meet the adequate needs of the farmers it becomes the moral duty of the other segment of the society which is well off to take interest in the development of its economic and social status. The time has come that there should be some change in the social set up and the society should take more interest and treat the rural labourers also as human beings and as one of them. A joint efforts should be made through the coordinated effort of the social institutions and the academic institutions to educate the society about their moral duty and also to increase consciousness among the depressed classes about their right and duty. In this connection it is also important that since they are depressed since centuries they themselves should at least take due interest and work hard. The 20 point programme would prove to be a boon to these depressed classes and lead the country's progress on egalitarian lines strengthening the democratic set up.

References

1. Rajani P. Dutt : India Today, 1947.
2. Reports of Second Agricultural Labour Enquiry and All India Rural Labour Enquiry.
3. Directorate of Economics and Statistics; Ministry of Food and Agriculture, Government of India.
4. 25th Round of the N.S.S.
5. Garg J. S. : Employment Pattern, Wage Structure and Level of Income of Agricultural Labour in Western U.P., seminar on Rural Labour—Problems, Policy and Perspectives, Ludhiana, 1975.
6. Aulukh H. S. and Singh Balwinder : Employment, Earning and Indebtedness of Agricultural Labour in Amritsar District of Punjab, Seminar on Rural Labour—Problems, Policy and Perspective, Ludhiana, 1975.
7. Shyam Radhey and Thapliyal K. N. : Income Saving and Invesment of Agricultural Labourers in an Agriculturally Progressive Area of Purnea District of North Bihar—(1971-72) Publication No. 53, Agro-Economic Research Centre, Allahabad, 1974.
8. Singh R. P. and Shukla P. C. : Assessment of Employment/Underemployment in Ghazipur District East U.P. 1974, Publication No. 56, Agro-Economic Research Centre, Allahabad.

Choice of Consumption Path and Indian Plans

Sujit Kumar Ghosh*

The essence of economic planning lies in the determination of ends and means, the latter being so determined as to achieve the former in a best possible way, given time and resources. A particular end, decided upon, may be attained by different means and this brings to the fore the crucial question of choice in planning. The problem of the choice of ends to be attained is, of course, related to the problem of target-setting that depends upon identification of social needs, demand-supply projections, social value-judgement, etc. Choice of means is made on the basis of the nature of end, resource position of the economy, relative factor prices, technical progress attained, given stage of economic development, and desirability of its impact on the socio-economic life of the nation, etc. Choice decision has, therefore, much to recommend itself in regard to the formulation of a particular plan-strategy. For a common goal of planning like realisation of growth objective the planners are to make a suitable choice among the available consumption paths keeping in view the socio-economic condition of the country concerned. Here, we may set out to investigate the nature of relationship between this growth-end and the consumption-means in the context of a planned economy like that of India.

In the light of technique of production to be chosen if we view at the available consumption paths for growth, different types of consumption behaviour corresponding to different production techniques —labour intensive and capital intensive—come to a clear relief. Employment of technique having a low capital-labour ratio in the process of production obviously means a large share of labour in the divisible pool of national income. High wage-income ratio clearly indicates high level of consumption within the economy insofar as the propensity to consume of the wage-earners is very high. Labour-intensive

---

* Ramkrishna Misson Vidyamandir, W. B.

technique in use, therefore, quite natually creates heavy pressure on the consumption-goods industries which are called upon to meet the swelling demand for consumer goods. This has ostensibly an adverse effect on the capital or investment goods sector of the economy. Let us push this point a little further and explain its implications.

In case of employment of capital-intensive technique immediate employment of labour is not maximised (which is maximised in labour-intensive technique), but there is here wide opportunity for maximisatian of surplus over consumption, More surplus means more is left to be reinvested. This, in fact, is in tune with the famous version of Galenson and Leibenstein that marginal per capita re-investment quotient is much higher for capital-intensive industries than for labour-intensive ones. Hence, technique with a high capital-labour ratio helps maximisation of growth in the long-run through surplus maximisation and larger re-investment. Present consumption cannot rise much in this case.

Capital goods sector, which by and large uses capital-intensive technique, for its growth calls for some amount of sacrifice of present consumption for the benefit of future consumption. The atmosphere favourable for the growth and expansion of the capital-goods or investment goods industries is thus created out of a situation where investment rises more than consumption. This consumption lag is ascribed to high growth rate of savings. But this situation holds out a promise for the future as the seeds of high rate of future growth, with high level of long-run employment and high future consumption are latent in it. There is, after all, no ambiguity in the truth that larger savings are mostly desired from the viewpoint of long-run growth rate of the economy. Savings virtually amount to future consumption.

A few word may be added to the aspect of future consumption before coming directly to the case of allocation of investment in the consumption goods and capital goods sectors and the bearing of such allocation on consumption paths and economic growth. Productive capacity of an economy is an increasing monotonic function of productive investment and technical knowledge. For productive investment to rise there must be greater generation of surplus over consumption and channelisation of this surplus to productive uses. There may be different means for generating this surplus—fiscal or otherwise. But the fact remains that better savings investment behaviour of the economy at the expense of present consumption infuses a momentum into the economy which serves as a very powerful income-raising factor initiating a virtuose process of growth. In an over-populated economy like that of India where population has become too large in relation to her productive capacity and thus a powerful income-depressing force, the magnitude of the stimulant is smaller than that of the shock, thereby leading to perpetuation of backwardness. In order to break away from this trap, a 'critical minimum effort' is essentially required which calls for a much higher value of the income-raising force like productive investment, so much so that it can transcend the maximum upper limit of the income-depressing force. This is undoubtedly a plus point in favour of future as against present consumption.

Taking a cue from the multi-sectoral planning model of Feldman-Mahalanobis type it can be asserted that allocation of investment as between consumption goods and capital goods sectors should proceed in such a manner that the latter gets the preference over the former and it is in the interest of secular growth of the economy. We may here find out the relevance of the available consumption paths in the context of such allocational aspect and study their implications. To start with, total investible fund is taken as a constraint or as given and the problem is to allocate it sector-wise in a way so as to attain a postulated rate of growth within a fixed time interval. Feldman-Mahalanobis views focused on larger allocation of investment in the capital goods sector as the best possible means for achieving such growth-end. In Indian economy the Mahalanobis model found its application in the Second Five Year Plan (1956-61) which thus came to be characterised by the heavy industry strategy of the plan. Let us now put the matter in proper perspective for the exposition of the problem of choice of consumption path.

There is a given investment fund. The proportion of it allocated to the capital goods and consumption goods sectors is taken as λ_k and λ_c respectively. Let α be the fraction of total income, y, invested for enlarging the capacity of the capital goods sector. β is used to mean the output capital ratio. '*o*' and '*t*' are used as time-subscripts.

Now income of the capital goods sector (y_k) and that of the consumption goods sector (y_c) are $y_k=\lambda_k\beta_k$ and $y_c=\lambda_c\beta_c$. If now y_k in the initial period '*o*' is assumed to be 1, then y_k in the period '*t*' is $(1+\lambda_k\beta_k)^t$. The income difference of this sector between period '*o*' and period '*t*', therefore, becomes $(1+\lambda_k\beta_k)^t-1$. The total income difference between '*o*' and '*t*' is then

$$y_t - y_o = \alpha_o y_o \{(1+\lambda_k\beta_k)^t - 1\} \frac{\lambda_k\beta_k + \lambda_r\beta_r}{\lambda_k\beta_k}$$

$$\text{or,}\quad y_t = y_o \left[1 + \alpha_o \frac{\lambda_k\beta_k + \lambda_c\beta_o}{\lambda_k\beta_k} \{(1+\lambda_k\beta_k)^t - 1\}\right]$$

It may here be noted that if we attach a high value to λ_k given α and β_k, initiablly total income will rise slowly ; but in the long-run, that is, with the increase in the value of the exponent, 't', this income will rise fast and the growth rate will thus be significantly accelerated. Greater allocation of investment in the capital goods sector means acceleration of the long-run rate of growth of the economy.

What follows from this analysis is that growth is a function of the proportion of investment going into the investment goods sector. But higher or lower rate of growth (let this rate be g_r) depends on how large or small is this proportion of investment. If there are two values of λ_k like λ_k^1 and λ_k^2 and if $\lambda_k^1 > \lambda_k^2$, we find two different rates of growth—one is $g_r^1 = f_1(\lambda_k^1)$ and the other is $g_r^2 = f_2(\lambda_k^2)$. Here, in the long-run $g_r^1 > g_r^2$. The growth path corresponding to g_r^1 up to certain point lies below the path corresponding to g_r^2 but beyond this point (that is, beyond a time gap) the former path moves further and further above the latter path. Therefore, higher is the value of λ_k, that is, larger is the proportion of investment allocated to the capital goods sector, smaller will be the increase in income in the short-run and larger will be the increase in income in the long-run.

Likewise we can analyse a functional relation between consumption growth and investment allocated for the capital goods industries. Rate of growth of aggregate consumption, which may be designated as C_r, depends on allocation of investment for the investment goods sector and here also we find different consumption paths corresponding to higher or lower value of λ_k. Thus for λ_k^1 and λ_k^2 there exist consumption-allocation relations like

$$C_r^1 = c^1(\lambda_k^1)$$

$$\text{and}\quad C_r^2 = c^2(\lambda_k^2).$$

In the long-run, $C_r^1 > C_r^2$.

This means that slower will be the rate of growth of consumption in the short-run and faster will be this growth rate of consumption in the long-run, larger is the magnitude of λ_k. Hence, the consumption path corresponding to $c^1(\lambda_k^1)$ must cut the path corresponding to $c^2(\lambda_k^2)$ from below. This clearly indicates that the former path after certain lapse of time lies above the latter path which thus establishes the fact that the future growth of consumption will be significantly high if the capital good sector is given the priority in the field of investment allocation. After all, income, consumption and also employment all tend to be maximised in the long-run if much greater emphasis is laid upon the growth of investment goods industries by allowing the flow of the major amount of total investible resources of the economy in them. Here, of course, the consumers are to suffer for certain period of time till the effect of growth makes itself felt and the economy gathers sufficient momentum and the common man is benefited in this process of development. This is the quintessence of the rationale of the strategy bent upon future consumption at the cost of present consumption.

It was with such long-run growth end in view that the heavy industry strategy (as propounded by Prof. P. C. Mahalanobis) was formuluted for the Second Five Year Plan (1956-61) of India and was ultimately put into effect. The choice of consumption path, as implicit in this strategy, naturally weighed future consumption more than the present. Excessive emphasis was virtually put upon the programmes of rapid industrialisation in the Second Plan and here the capital goods sector got the pride of position. The logic behind it was definitely the speedy long-run growth of the economy and progress of long-run employment ; but this, being an unbalanced growth strategy, created dualism within the economy. The consumer goods industries and agriculture lagged behind the investment goods industries. There was shortage of food and consumption goods resulting in acute sky-rocketing of prices. Import figures took big jump upwards consequent upon increasing reliance on purchasing from abroad in the field of food, equipment, machine parts, etc. thereby depleting our scarce foreign exchange reserves. The economy passed through severe stresses and strains arising out of multiplying forces of economic instability. Our scarce skill and foreign exchange-resources were not sufficient to meet the demand of the situation. After all, for the success of the heavy industry strategy the three important preconditions to be met are proper availability of skilled labour, adequacy of foreign exchange and attainment of certain minimum stage of growth of consumer goods industries and these were far from being realised in Indian economy at the time of launching upon this strategy. In India consumers' interest was discriminated against for the sake of long-run benefit for the economy. The inetnsity of the pinch as felt by the consumers could have been lessened provided price control and public distribution mechanism could be geared up and properly energised and monetary fiscal and physical shock-absorbers of the economy could be sufficiently strengthened.

It is in the logic of growth economics that there is strong theoretical support in favour of the choice of consumption path relying on future consumption in the case of perspective planning. Its practical application has been vividly exemplified by economic planning of Soviet Russia where the consumers had to make much sacrifice since the late 1920s and through the subsequent period and had to wait until much later (that is, only in 1960s) when there came to be very rapid growth of consumption in the economy. It is, of course, a typical case of a command economy committed to totalitarian planning. In Indian economy where democratic planning has been operating within a mixed economy set up no rigid decision of the centralised authority can be foisted upon the consumers. The type of planning as typified in this economy, naturally, calls for wilful participation of the people and here full honour is done to the voice of the people at large. Present need of the consumers and of the society cannot here therefore be utterly disregarded, even though India's perspective planning has certain long-run ends in view like long-run rate of growth, inter-temporal behaviour of investment, employment, etc. It is for this simple reason that Indian planners are to think in terms of a happy compromise between present needs and future requirements and are to fix upon a peaceful and harmonious process of adjustment.

What is more, in India more than one-third of the total population is estimated to be living below the 'poverty line', the official definition of which is the level of per capita monthly consumption of Rs. 37. The level of social consumption (ie. consumption of health and educational services ; different amenities pertaining to drinking water, rural electrification, rural roads, sewerage, slum improvement, etc.) is also disappointingly low and due to this the Fifth Five Year Plan (1974-79) of India has made a special provision for carrying through a 'Minimum Needs Programme' for ensuring at least an agreeable minimum level of social consumption throughout. Above all, raising a huge chunk of total population above the critical minimum level of consumption expenditure as indicated by 'poverty line' must be an onerous responsibility of the planners in India and here the present social needs are to be primarily fulfilled so that we can dodge past any major social catastrophy and economic malaise. Since the Fourth Plan period (1969-74) in India much greater emphasis has been given upon the growth of purchasing power of the erstwhile neglected section of the population. Much importance has been paid to the aspect of utility maximisation on the part of the teeming millions of consuming public. Agriculture and the rural economy are, of late, getting renewed emphasis and a belated attempt is being made to reinvigorate this sector of our economy. It is also true that without supporting growth of the consumption goods sector capital goods industries cannot move far in course of its expansionary activities.

The current Fifth Plan in India has aptly made a direct frontal attack on poverty. To realise this objective both raising the growth rate and restructuring the consumption demand are vital necessities. For demand redistribution we are to bank not only upon fiscal adjustment but also on employment expansion including wider opportunities for self-employment. The choice of techniques in as many cases as possible should be such that capital-labour ratio is kept low which implies that the productivity of labour employed is quite high. Plan strategy as being emphasised upon at present in India virtually conforms to generic method of development that aims at improving the position of the general body of people. After all, the key note of the strategy of India's Five Year Plans should be development from below. In this case, the focus of attention must be on base planning which is mainly to concern itself with panchayet-level and village-level planning. This is the best way to identify the present need of the major bulk of our population living in rural areas and this way we can best project their consumption demand. Until this demand is fully met it is no use artificially suspending present consumption for the sake of future benefit. It is only after fulfilling the minimum consumption needs of the population that the planners can safely and judiciously embark upon the strategy that promotes future consumption through the drive to maximise the secular rate of growth of the economy. It is not at all prudent to develop the capital goods sector of the economy without attaining a minimum stage of development of the consumption goods sector. This does not amount to a negation of any expansion of the investment goods industries which may have significant external economy benefits and may serve as basic and key units in the industrial world. As a matter of fact, what is important is to make a penetrating study of the subtle process of interaction of the investment goods and consumer goods industries, of the large and small, the heavy and light producing units. The golden recipe is to secure an optimum relation between these different branches of economic activities.

There is still another way of looking at the thing. It is symptomatic of rational thinking and behaviour of the planners to develop first the capital goods projects having short 'gestation gap' or very small 'fruition lag'. Such quick-yielding projects virtually make consumption goods available for final consumption within a very short period. If this time gap lengthens out due to more investment on large gestation gap capital goods industries, the consummers are to bear the brunt of inflation for a long period of time. In an economy where there exist pressure points much sensitive to the forces of inflation and where monetary-fiscal discipline is not much rigorous, quick benefit projects are initially very helpful. It may be that such projects are not necessarily all highly productive, but that does not cause much worry since a good deal of returns from them may be reinvested in a later period in more productive projects and thus the economy can get the feeling of 'compounding effects' of investment. If the instruments of planning are wielded in such a fashion that an unwieldy section of consumers either do not get the opportune situation for rising above the poverty line or is kept waiting for a prolonged period during which the mounting cost of living persists in making huge inroads into the purchasing power, the fabric of democratic planning is likely to be torn apart. While keeping this present requirement in view, we must also see to it that the future needs of the economy are getting due importance. After all, there is to be a compromise between the present and the future consumption and here, therefore, there must not exist any rigidity of the choice of consumption path. This is the way to rationalise our choice decision on the consumption front in a setting of democratic planning like ours, as opposed to totalitarian planning or planning by dictates where certain long-run ends are pursued at a high social cost. For us growth is not an end in itself. Our end-achievement is to reflect development that combines growth with a stable economic order, social justice and mass welfare.

Price and Employment Indices

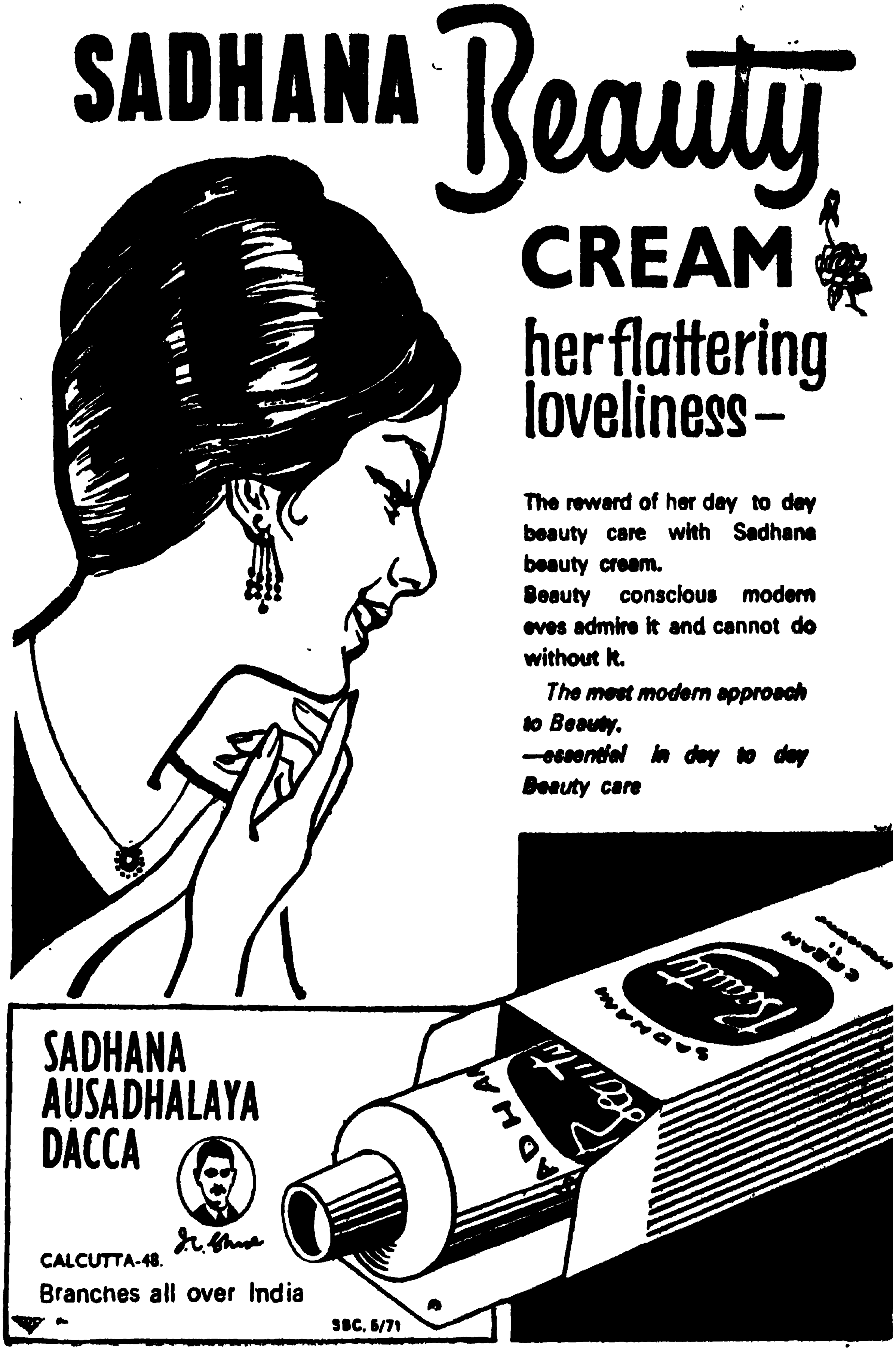
All-India Average Consumer Price Index Numbers for Industrial Workers (General and Food) (Base : 1949=100 and 1960=100)

Base Period Year	Base : 1949=100		Base : 1960=100	
	General Index	Food Index	General Index	Food Index
1961	126	126	104	109
1962	130	130	112	107
1963	134	135	110	117
1964	152	155	125	134
1965	166	172	137	149
1966	184	190	151	164
1967	209	222	172	192
1968 Average	215	228	177	196
1969	213	220	175	190
1970	224	231	184	200
1971	230	235	190	203
1972	245	250	202	216
1973	287	304	236	262
1974	369	396	304	342
1975	390	413	321	357
1976	360	361	296	312
1976—				
April	351	348	289	301
May	352	350	290	302
June	354	352	291	304
July	361	362	297	313
August	362	363	298	314
September	367	369	302	319
October	369	373	304	322
November	372	375	306	324
December	372	374	306	323
1977—				
January	373	375	307	324
February	377	380	310	328
March	379	384	312	332
April	380	385	313	333

Employment

Year/Month	Average No. of applicants placed in employment during the period (000)	No. of applicants on the live register at the end of period (000)	Average No. of employers using the exchanges during the period (000)	Average No. of vacancies notified during the period (000)
1951	35	329	6	41
1956	16	759	5	25
1961	34	1,833	10	59
1966	42	2,622	13	71
1970	37	4,069	13	62
1971	42	5,100	13	68
1972	42	6,896	13	72
1973	43	8,218	13	73
1974	33	8,435	11	56
1975	34	9,326	11	57
1976	41	9,772	13	70
1976—				
March	41	9,353	14	70
April	39	9,380	13	69
May	40	9,535	13	69
June	43	9,609	14	71
July	43	9,774	15	76
August	41	9,625	14	74
September	39	9,639	14	72
October	39	9,587	12	76
November	44	9,682	14	70
December	49	9,772	13	75
1977—				
January	39	9,953	13	65
February	42	10,149(R)	12	63(R)
March	39	10,239(R)	12	65

(R)—Revised.



SADHANA Beauty CREAM

herflattering loveliness–

The reward of her day to day beauty care with Sadhana beauty cream.
Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.
—essential in day to day Beauty care

SADHANA AUSADHALAYA DACCA

CALCUTTA-48.
Branches all over India

SBC. 5/71

Inland Rs. 30.00 (Net)

Foreign US $10.00
Postage by surface
US $2.00

This Copy Rs. 2.50

Published by H. Roy from 10, Galiff Street, Block 5, Suite 64, Calcutta-3
and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh
Lane, Calcutta-6. **Editor : Himansu Roy. Phone : 55-0477**

ECONOMIC AFFAIRS

- Gandhian Model of Rural Development
- Gandhian Call of 'Back to the Village' and Planning from Below
- Pattern and Efficiency of Financial Management in Indian Industries Since 1951
- Monetary Rules, Incomes Policy and the Natural Rate of Unemployment
- Workers' Participation in Management in India

Vol. 22, Nos. 9-10 SEPTEMBER-OCTOBER 1977

Revised Annual Subscription Rates :

India :	**Rs. 30.00**
Foreign :	**US $ 10.00**
Postage :	**$ 2.00 (by surface)**
Single Copy (ordy.)	**Rs. 2.50**

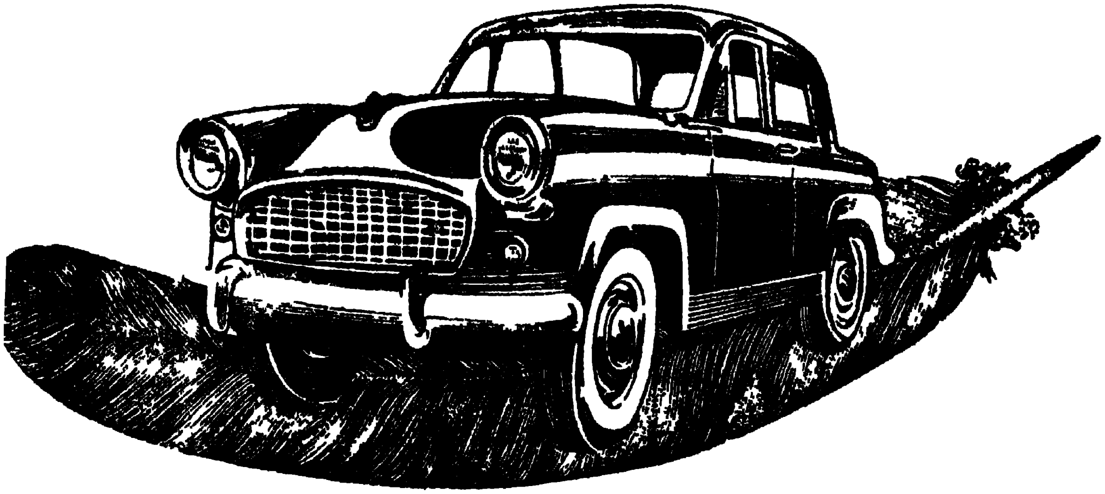
Outstation cheques shall bear Rs. 5.50 extra.
Effective from January 1977.

Sd/ M. Roy
Manager,
Economic Affairs

15 September 1976

Surely, you would like your car off the shelf, factory-fresh, brand-new. Not the one that has done a cross-country run along dusty, smouldering highways in the summer or slushy, rain-sodden roads in the monsoon, over potholes and bumps. Why not have the car of your choice brought over to your city by rail—mounted and secure on a rail-truck—and thus avoid road hazards that may leave a dent or a scratch on your new car.

Get your car factory-fresh



You would also do a service to the nation. You would save much petrol that costs foreign exchange. For dealers in cars in large cities, we can even run a special train on request.

Let us bring your car to your city with protective and delicate care, as on a feather bed.

For details contact:
MARKETING AND SALES DIVISION, EASTERN RAILWAY
3 KOILAGHAT STREET, CALCUTTA. TELE : 22-[illegible]

EASTERN RAILWAY

SHORTLY AVAILABLE !!

THOROUGHLY REVISED AND UPTODATE
Fourth
EDITION

A TRACT ON MONEY

By
RABINDRANATH MITRA
B.SC. (ECON.), (LOND), BAR-AT-LAW
Formerly, Principal, Ananda Mohan College, Calcutta

And

DR. HIMANSU ROY
M.A., M.COM., Ph.D.
Principal, Ananda Mohan College, Calcutta
Editor, Economic Affairs, Calcutta

This edition includes almost all the current developments in monetary theory and international monetary cooperation, including the collapse of Bretton Woods and re-emergence of International Monetary Fund.

Some Highlights :

Value of Monery : Saving and Investment : Consumption : Multiplier and Acceleration Principles : Growth Theory : Monetary Theory of Interest : Theory of Inflation : Business Cycle : Exchange Rates and Exchange Control : International Monetary Cooperation.

THE WORLD PRESS PRIVATE LTD.
CALCUTTA 12

উৎসবে আনন্দে

বাংলার রেশম

তসর, গরদ, মটকা, র-সিল্ক, বালুচরী ও অন্যান্য রেশম বস্ত্রের জন্য

প্রাধিকারিক (রেশম)
ডাইরেক্টরেট অব সেরিকালচার এণ্ড সিল্ক উইভিং
পশ্চিমবঙ্গ
৩/১, ব্যাঙ্কশাল ষ্ট্রীট,
কলিকাতা—১
ফোন নং ২৩-২২১৪

Reappearing After Emergency

NISHANA

A BENGALI MONTHLY

EDITED BY
JYOTISH CHANDRA JOARDAR

13, CIRCUS ROW,
CALCUTTA 700017

Contents

Editorials

325 Gandhian Ideals and the Janata
327 Democracy Does not Pay

359 Review

Articles

H. C. Mehrotra and D. K. Kulshrestha
329 Workers' Participation in Management in India

R. W. Latham and D. A. Peel
334 Monetary Rules, Incomes Policy and the Natural Rate of Unemployment

B. Kumar
341 Pattern and Efficacy of Financial Management in Indian Industries Since 1951

G. S. Lavania, M. M. Bhalerao and B. L. Jain
352 Modern Technology and Human Labour Utilization in Developing Countries—A Sample Study in India

Sujit Kumar Ghosh
361 Gandhian Call of 'Back to the Village' and Planning from Below

A. K. Sur
368 A Note on Gandhian Economics

G. P. Mishra
372 Gandhian Model of Rural Development : A Retrospect and Prospect

R. K. Choudhury
385 Resource Allocation in Public Enterprises

S. S. Grewal and Balwinder Singh
393 Agricultural Production in India

ECONOMIC AFFAIRS

Volume 22 September-October 1977 Nos. 9-10

Gandhian Ideals and the Janata

It is now on the horizon that the Janata Party will soon finalise its economic programmes which will be based on Gandhian ideals of decentralization and reduction of disparities ; but it would take the country to quick industrialization as a development measure.

This indicates that 'decentralization' and 'reduction of disparities' are not inconsistent with 'industrialization', in Gandhian sense. But they do. Gandhi was opposed to machine. For machine means mass production, means industrialization leading to exploitation of many by a few and the exploitation of the poor countries by the rich ones. He said, "Industrialisation is no remedy to pauperism." He stressed, "I do not believe that industrialisation is necessary in any case for any country." He was not opposed to machine as such. He was ready to welcome it if it provided amenities to living and made the work easy. But "I am totally opposed to it when it mesters us." Nor was he opposed to "some key industries" and "State ownership" too "where a large number of people have to work together".

Thus, then, according to Gandhi industrialization is incompatible with reduction of disparities, income or regional. "Industrialisation on a mass scale will necessarily lead to passive or active exploitation of the villagers as the problems of competition and marketing come in." His novelty in approach lies in localization of production and distribution, and in that case only equalization of the two is possible. What he meant to say was that "Every village is to produce and use all its necessaries and in addition, produce a certain percentage as its contribution to the requirements of the cities." The "self-reliant" village is the key of his economic thought and the foundation of his "Khadi mentality". And Khadi mentality cannot grow without Panchayat Raj and without a Panchayat Raj high thinking and plain living is not possible ; for it presupposes a spiritualized society.

To make justice to Gandhian ideas, one has to accept Gandhi's philosophy of life and matter in full and reject the modern industrialization, trade and commerce without reservation and recognise "class" collaboration and "trusteeship" as the basic social philosophy.

A severe constraint of his process is the method of "conversion" through non-cooperation and non-violence. That is, there is no scope for bloody and rapid process of conversion or revolution. Things will move to the determined path of change peacefully and hence slowly.

Certainly the Janata Party does not mean all this. For to make experiment in Gandhian ideas will call for the sealing of India's political boarders from foreign intercourse and entail an end to the present mixed economic system and the urban-rural conflicts that rest on exploitation of the latter by the former by means of industrialization. This will also initially call for some sort of Emergency or for that matter regimentation to make the people and the business understand what the Gandhian ideas are. Such things will be obviously unacceptable and unpalatable to the Janata Party as it is currently suffering from the ghost of Indira Emergency.

All this drives us to believe that what the Janata Party intends is to use the great name of Gandhi to give bias to small and cottage industries to use local labour to meet the challenge of the growing unemployment. There is nothing new in it and this way or that. it was practised in our economy by the Congress Governments but not with much success. Still it is a welcome approach. For it is better to have a less sustained and lower rate of growth than unemployment and social unrest on the back in a climate of Western democracy. But for this small and old matter it is not prudent to use the name of Gandhi or his ideas ; they are something quite different.

"The Communists...do not make any distinction between fair and foul, truth and falsehood...Moreover, they seem to take their instructions from Russia, whom they regard as their spiritual home rather than India. I cannot countenance this dependence on an outside power. I have even said that we should not depend even on Russian wheat in our present food crisis...The same applies to foreign ideologies. I would accept them only to the extent that I can assimilate them and adapt them to the Indian scene. But I must refuse to go under them."

—Mahatma Gandhi in Harijan,
6-10-1946, pp. 338-339.

Democracy Does Not Pay

Mrs Indira Gandhi, until recently the Prime Minister of India, was arrested on the 3rd October 1977 on two corruption charges that her Government gave contract to a French State-controlled oil firm, Cie Francaise des Petroles, for the development of the Bombay High off-shore oilfield resulting in a national loss of $ 13.4 million as the lowest tender was $ 4 milllion and that she obtained 104 jeeps for the use of her party in the last Parliamentary election misusing the official position. She was produced in the court of the Additional Chief Metropolitan Magistrate on the following day. The Magistrate observed, "There being no reasonable grounds for detention of the accused" and then and there she was released honourably. Thus, the precious public money flowed into the drain.

Interestingly the State-controlled French oil firm denied any corruption in granting the contract and pointed out that the contract was signed by the Janata Government on the 6th April 1977. That is it could avoid the negotiation made by the previous Congress Government if it was serious about this loss to the nation. But it did not. People have enough knowledge, assumed or otherwise, of who finance whom in the general elections. This seems to be a general corrupt practice that may require a national probe.

The Janata Government claims to be generous that it did not put Mrs. Indira Gandhi to a Nuremburgh type trial. It has become a common practice to recall Hitler alone for all acts of wild atrocities and excesses. It is a matter to lament that some people are determined to forget that Hitler was the liberator of the world from the yoke of imperialism and that he was the most important element in disrupting the world socialist system revealing the true character of the "scientific" Marxism, pure and as revised by Leninism. The Janata Government has done one thing then that by not staging a Nuremburgh type trial it has refused to glorify Mrs. Indira Gandhi as the liberator of the people of India from the yoke of colonial stagnation. However, the people are least interested in (undefined) excesses and Emergency and most in food and prices. They have that amount of understanding that excesses are the necessary consequences of Emergency and the Emergency is the demand of certian objective conditions. Indira may go and the Congress may be crushed but the democracy is bound to be overrun if and when it will fail to satisfy the people's needs. Rise and fall of the great dictators of the world, including the 'socialist' world, bear sufficient testimony to it. No deterrent punishment to anybody or any party can stop the social creation of a totalitarian rule. The logic of history takes its own course.

Assuming that the Janata leaders have no personal grudge againt any leader of the Congress, and what it wants is that the people should know how horrible was the act of Emergency and thereby likes to end the political career of the "culprits" and warn the future leaders not to go that way again. Then it is all good. Still it is not the correct path to liquidate the chance and charm of Emergency. Can the Janata Party cite a single developing country that has not passed or is not passing through a state of emergency, if not through military rule? If it seriously likes to liquidate Emergency, and perpetuate Democracy, it must first of all redefine the latter in the Indian context and should then proceed to establish in democratic ways that the country can pick up progress by consent rather than by coercion. Even then if Mrs. Indira Gandhi comes back she will have to take to that path, if it is correct, as otherwise the people will throw her out again and again. Forced liquidation of a leader or his party brings in chaos only and out of this a more stronger Emergency will arise whose first occupation will be to liquidate the liquidators, with a gigantic welcome from the people. This is not at all healthy for a nation.

The people voted the Janata Party to power for better management of the national resources, and to ensure individual liberty, develop a two-party democratic system and create a model of modern socialism based on vast and rich national heritage. It is now for the Janata Party to judge in introspection how far it has gone that way.

Workers' Participation in Management in India

H. C. Mehrotra and D. K. Kulshrestha*

Being a human being every worker wants that his opinion and voice should carry some weight in the working and management of the enterprise in which he is working. Prof. F. S. Walpole has very rightly stated that, "It is not a matter of man being accorded the privilege, although an employee, of stating a complaint or offering a suggestion but of having a recognised responsibility for doing so because he is investing not money but life." This quotation throws enough light on the importance and need of the workers' participation in management. The object of this paper is not to discuss the concept, aims and objects of the scheme but to throw light on its implementation and future prospects.

The concept of workers' participation in management is a part of the labour policy of the Govenment of India. The Industrial Policy Resolution 1956 states, "In a socialist democracy labour is a partner in the common task of development and should participate in it with enthusiasm—there should be joint consultations; and wokers and technicians should, whenever possible, be associated progressively in management."

Labour and management relations are the bases of social relationship in an industrial society. With the progress of industrialisation in the country, Government of India made all possible efforts to democratise these relations. More emphasis was given on implementation of the scheme of workers' participation in management during the Second and Third Five Year Plans, when the Government of India tried to bring in the industrial democracy and took the concept of workers' participation in management as a part of its labour policy. The setting up of Works Committees and Joint Management Councils were some of the early steps taken by the Government of India in this regard. Despite all these efforts made by the Government, the

---

* H. C. Mehrotra, Reader and Head of Com. Dept., R. B. S. College, Agra, and D. K. Kulshrestha, Dept. of Com., Hindu College, Moradabad.

National Commission on Labour observed, "It appears that the experiment of workers' participation in India is not only at the lowest level of evaluation but also that workers, unions, employers and State do not have any real interest in its success." The position of industrial labour in the country makes it clear that the workers have no voice in the ownership and management even after more than twenty-five years of economic planning in the country. The progress of the scheme has been at such a slow rate that public have started thinking it as an utter failure. The Government observed that the working of the Joint Management Councils has not been satisfactory. On one hand labour respresentatives fight for better facilities and put up their demands in many ways for higher rates of wages, better and improved conditions of work, security and permanency of their jobs and so on and so forth, but do not pay any attention for higher productivity, lesser absenteeism, modernisation, mechanisation, economy etc. in the respective enterprises. On the other hand employers too do not consult the labour representatives, while introducing new production, improvement in macinery etc. They do not even take the confidence of workers, while closing down or opening new units of their respective enterprises. In some cases we see that the Joint Management Councils have been entrusted with some powers but we do not find any practical use of such powers.

Whatever may be the stage of implementation of the scheme of the Workers' Participation in Management, it is a matter of great satisfaction that the same exists in the Indian industries despite a number of difficulties and problems in its implementation and weaknesses in the scheme itself. An evaluation report of the scheme states, "The experience had shown that successful function of Joint Management Councils had regulated, in varying degrees, better industrial relations, a more stable labour force, increased productivity, reduction in waste, better profits and a close understanding between the management and the workers."

Now we discuss below the steps taken by the Government of India from time to time to implement this scheme in Indian Industries.

Code of Discipline

The Code of Discipline should be regarded as the first step towards the Workers' Participation in Management. The Code was sponsored by the Government of India in 1957 and was accepted voluntarily by the Central Organisation of Workers and Employers in the subsequent years. The parties agreed to settle all disputes and grievances through mutual negotiations and arbitration ; and not to take any unilateral action. The Code required the employers to recognise the majority unions and to finalise a mutually agreed procedure to decide disputes. Accordingly, a model precedure was formulated in 1958. The Code also prohibited the strikes, lockouts, victimisation, go slow practice, etc. without notice.

Voluntary Arbitration

Settlement of industrial disputes through voluntary arbitration found its place in the Industrial Disputes Act 1962. The Industrial Truce Resolution, which was accepted by the Central Organisation of Workers and Employers in 1962, provided that cases like dismissal victimisation, retrenchment etc. not settled by bilateral negotiations should be settled through arbitration. To popularise the arbitration, a Tripartite National Arbitration Board has been set up to review the progress of voluntary arbitration from time to time and analyse the factors affecting its popularity.

Joint Management Councils

The Industrial Policy Resolution of April 1956 states that in a socialist democracy, labour is a partner in common task of development and should participate in it with enthusiasm. Accordingly, it provided for the set up of the Joint Management Councils in the industrial enterprises. In 1975-66 such Management Councils were functioning in 80 industrial undertakings—31 in public and the rest 49 in private sector.

Workers' Participation in Industry

The Government of India drafted a scheme to include workers in management and implement it since October, 31, 1975. In the beginning the scheme aimed to set up the Works Councils and Joint Management Councils in all those manufacturing and mining industries where 500 or more workers work. The scheme has brought in increased efficiency and productivity by minimising the labour absenteeism and turnover.

Subsequently, the scheme was also introduced in the commercial and service units in the public sector and the scope of the scheme was also extended to the units engaging 100 or more workers. Now the workers are serving as directors on the Boards of all the nationalised banks. Workers' representatives have been taken in the Boards of Managements of a few big public enterprises like Hindustan Antibiotics Ltd., Heavy Electricals Ltd., and so on and so forth. Workers' representatives have been included in management of all the fertilizer industries under Fertilizer Corporation of India, all the public sector steel plants and coal mines. The scheme has been implemented in more than 1700 industrial units till March 31, 1977 in both public and private sectors. The scheme is being extended in hospitals, post and telegraph offices, Road Transport Corporations, State Electricity Boards, etc. Besides, in Indian Railways workers are being assigned proper place in management at all levels.

Future Prospects

The set-up of the Janata Government has brought in a new era of hopes for the implementation of the scheme, as the socialists and the Young Turks, who are now a part and parcel of the Janata Party, have always advocated the inclusion of workers in management. In the new Industrial Policy declared by the Minister for Industries, Mr. George Fernandes on July 8, 1977, it is assured that industrial peace shall be maintained by all possible efforts and workers' shall be given proper share in management.

The Government has also been considering how to enable the workers to acquire shares in Joint Stock Companies owning the enterprises, in which they work. In this regard, it will be worthwhile to mention the statement of the then Finance Minister, Mr. C. Subramaniam, which he gave, while discussing the Finance Bill 1976 in the Parliament that Rs. 1000 crores that had accumulated (till then) in the Government treasury through the Compulsory Deposit of workers, could be invested in the undertakings, in which they work. It will automatically give a place to the workers in the ownership and management of the undertakings concerned. Now when the first instalment of the Compulsory Deposit has been paid and the second is to be paid in cash, the Ministries of Commerce and Industry and Finance should make combined efforts to materialise this suggestion and invest the rest three instalments in such undertakings in stead of transferring them to Providend Fund or paying in cash. It will be enough in the beginning and later on a certain proportion of shares in Joint Stock Companies should be converted as labour shares.

The forced and compulsory imposition of the scheme on industrialists shall not prove to be much useful. Let it be developed by mutual understanding of the owners and workers. Mere inclusion of workers' representatives in management cannot solve the purpose, if their voice carry no weight in the management. For this purpose, the Government should make some statutory provisions. The Indian Companies Act and other concerning acts should be so amended that the voice of workers may have some weight.

The Janata Government is expected to bring some drastic changes in the labour policy and do all possible to assure the workers' participation in management. Let us hope that during the period of the Sixth Five Year Plan, which will be fully according to the policies and theories of the new government, the scheme will cover all the enterprises—both in public and in private sector.

References

1. Report of the National Commission on Labour.
2. B. Ghosh : The Changing Profile of India's Industrial Economy.
3. Bhagoliwal T. N. : Economics of Labour and Social Welfare.
4. Tyagi B. P. : Labour Economics and Social Welfare.
5. Industrial Policy Resolution 1956.
6. Hindustan (Hindi Daily) dated 3-10-1976 ; and
7. The Economic Times, dated June 7, 1976.

Development Aid during 1975 (in million US $) :
An East:West Comparison

	Soviet Union	COMECON member countries	ALL OECD countries	Federal Republic of Germany
Public aid	797	app. 1,000	13,600	1,691
Private aid	—	—	25,230	3,273
Total	797	app. 1,000	38,830	4,964
Share of GNP	0.5%	app. 0.5%	1.02%	1.18%

Monetary Rules, Incomes Policy and the Natural Rate of Unemployment

R. W. Latham* and D. A. Peel*

Friedman hypothesis is that there is no long run trade-off between inflation and unemployment [1968]. In the absence of monetary disturbances the economy will gravitate towards a situation where the actual and expected rates of inflation are equal and unemployment is constant at the natural rate. At this rate of unemployment the proportionate rate of inflation is equal to the proportionate rate of monetary expansion net of the rate of output change times the income elasticity of real balances.

Since, given the above scenario changes in the money supply do not have any real influences on the economy in long run ; the natural question arises as to the appropriate form of monetary policy in the short run. Friedman suggests that we have insufficient knowledge of the dynamic structure of the economy and hence discretionary monetary policy is likely to accentuate fluctuations in economic activity. Consequently he suggests that the policy maker should follow monetary rules. His own personal preference is to follow a policy of constant monetary expansion.

The purpose of the present paper is to examine the dynamic implications of such monetary rule in a model which possesses a natural rate of unemployment. We also examine the implications of the authorities pursuing an incomes policy in conjunction with the monetary rule.

This analysis seems to be of some importance for, while numerous empirical tests of the efficacy of incomes policy on price and wage setting behavior have been made, (e.g. Lipsey-Parkin 1970) there has been little previous attempt to consider the implications of such a policy on the transition path of an economy to equilibrium or

---

* Department of Economics, University of Liverpool, U.K.

the stability properties in such an economy when it is typified by natural rate of unemployment.

The Model

The wage equation is given by

$$w=a-bu+p^e \qquad \dots \quad (1)$$

where w is the percentage change in money wages
u is the percentage unemployment rate
p^e is the expected percentage change in inflation
a, b are positive constants

Equation (1) is the neo-classical wage equation. It has been shown to perform well empirically in a number of economies. It can also be given a bargaining interpretation (See Turnovsky (1972)).

The price equation is given by

$$p=w+m_u \qquad \dots \quad (2)$$

wheres p is the actual percentage change in prices
m_u is the percentage change in the mark-up.

Equation (2) is a simple mark-up equation. The juxtaposition of equations (1) and (2) when m_u is assumed zero is the usual format for demonstration the zero-trade off hypothesis of Friedman. (See e.g. Smith (1970)). On substitution of (1) into (2) we obtain (for $m_u=o$).

$$p=a-bu+p^e \qquad \dots \quad (3)$$

Equation (3) demonstrates that when the actual and expected rates of inflation are equal unemployment is constant at the natural rate ($^a/_b$). Only when there is unanticipated inflation can unemployment differ from the natural rate. This is the essence of the Friedman hypothesis (see Friedman 1975).

We make one important change to this presentation. Empirical studies (e.g. Stroonback and Trivedi (1975)) suggest that demand factors have a direct impact on price determination. In particular it can be assumed that percentage changes in the mark-up (m_u) respond to aggregate demand. We proxy this idea by hypothesising that m_u responds to the differences between the actual percentage change in output (y) and the normal rate (y^*).

Thus $$p=w+k(y-y^*) \qquad \dots \quad (4)$$

where k is a positive constant.

This formulation also seems directly consistent with the views of Friedman, who argues that the real wage falls in the upswing of economic activity. He writes "Producers will tend to respond to the initial expansion in aggregate demand by increasing output....

Because selling prices of products typically respond to an unanticipated rise in nominal demand faster than prices of production, real wages received have gone down..." (Friedman 1968, pp 6-7).

The usual representation of the Friedman hypothesis where the mark-up is assumed constant cannot generate cuts in the real-wage in the upswing of economic activity. The unemployment function is given by

$$u^* = -g(y - y^*) \qquad \ldots \qquad (5)$$

where u^* is the change in percentage unemployment. Similar notation is used in the remainder of the paper.

g is a positive constant.

This function is suggested by Vanderkamp (1975). The unemployment rate is assumed to respond to deviations of output change from the normal rate. It is clearly only a linear approximation to a more complicated functional form and hence holds only for small changes in $y - y^*$. The demand for money in proportionate terms is given by

$$m = p + y - \alpha_1 \, p^{*e} \qquad \ldots \qquad (6)$$

where m is the proportionate increase in money demand and supply since we make the usual assumption of instantaneous adjustment in the money market. (e.g. Tucker (1966)).

α_1 is a positive constant.

This function captures the notion that real-balances depend on real-output (assuming, for simplicity, unit elasticity) and the expected rate of inflation, a proxy for the opportunity cost of holding money. This variable also captures the Fisher effect which is that nominal interest rates depend on the expected rate of inflation and the real rate of interest, here assumed constant. Cleasly, if $\alpha_1 = 0$ we obtain an old quantity theory model.

Finally, the model is completed by assuming that expectations of the rate of inflation are formed adaptively, thus,

$$p^{*e} = \phi(p - p^e) \qquad \ldots \qquad (7)$$

where ϕ is a positive constant.

This assumption, implies that the expected rate of inflation is a weighted average of past actual rates. The hypothesis performs well empirically (see, e.g. Carlson and Parkin (1975)).

Our model is thus given by equations (1), (4), (5), (6) and (7).

Some Analysis

The solution of this system of equations for unemployment is given by the second order differential equation :

$$u^{**}(1+k-\alpha_1\phi k)+u^*(gb+\phi k-g\alpha_1\phi b)+\phi bgu=a\phi g-gm^* \quad \ldots \qquad (8)$$

For a Friedmanite policy of constant monetary policy ($m^*=o$) the equilibrium solution of this model is given by

$$u={}^a/_b=\text{the natural rate} \qquad \ldots \qquad (9)$$

By inspection of the model we also find that

$$p=m-y^* \qquad \ldots \qquad (10)$$

These two equilibrium conditions reflect the strong monetarist assumptions of the model. Unemployment is equal to the natural rate of unemployment and the rate of inflation is equal to monetarry expansion net of real output change. This is the outcome envisaged by Friedman.

The stability properties of equation (8) are that the equation is stable if

$$\left\{\frac{gb+\phi k-g\alpha_1\phi b}{1+k-\alpha_1\phi k}\right\} > o \qquad \ldots \qquad (11)$$

This condition contrasts with the stability condition given by Cagan (1956) in his study of hyper-inflation that

$$1>\alpha_1\phi$$

Cagan's stability condition was obtained in a simpler model where output was assumed constant. Nevertheless it is interesting to note that a sufficient condition for (11) to be met is that

$$1>\alpha_1\phi \qquad \ldots \qquad (13)$$

From (8)

A cyclical path will occur if

$$(gb+\phi k-g\alpha_1\phi b)^2<4-(1+k-\alpha_1\phi k)(\phi bg) \qquad \ldots \qquad (14)$$

Incomes Policy

In this section the implications of adopting an incomes policy are examined. It is assumed that the policy takes the form of setting a constant rate of change of money, i.e. $w=w^*$. This type of policy is currently being employed by the U. K. government. In these circumstances the money wage equation (1) disappears since it has been replaced by the wage norm. Thus the model becomes

$$p=w^*+k(y-y^*) \qquad \ldots \qquad (4)$$

$$u^*=-g(y-y^*) \qquad \ldots \qquad (5)$$

$$m=p+y-\alpha_1p^{*e} \qquad \ldots \qquad (6)$$

$$p^{*e}=\phi(p-p^e) \qquad \ldots \qquad (7)$$

These equations can be simplified to yield the following equation.

$$u^{**}(1+k-\alpha_1\phi k)+\phi(1+k)u^*=-gm^*-\phi gm+\phi(gw^*+gy^*) \qquad (15)$$

The solution of this differential equation is, assuming constant monetary expansion, given by

$$u_t=A+A_1e^{+Bt}+Ct \qquad \dots \quad (16)$$

where A, A_1 are constants of integration and given by initial conditions

$$B=\frac{-(\phi)(1+k)}{1+k-\alpha_1\phi k} \qquad \dots, \quad (17)$$

$$C=\phi gw^*+\phi g(y^*-m) \qquad \dots \quad (18)$$

It is clear from (16) that unemployment will rise or fall for the duration of the policy as B and C are positive or negative. Assuming that the denominator of (17) is positive, for instance, that $1>\alpha_1\phi$ (a sufficient condition for stability in the model without incomes policy) the role of incomes policy is to introduce a trend (C) into unemployment.

Clearly, if the trend is positive equation (16) can only hold for a finite period of time since equation (5) will ultimately be violated since y can only exceed y^* by a finite amount. However, given this caveat the equation (16) is of some interest. We can observe that unless $m>y^*+w^*$ unemployment will ceteris paribus have a positive trend for the duration of the wages policy. Further, the solution for prices for the model is

$$p^*(1+k--k\alpha_1\phi)+\phi(1+k)p=km^*+\phi k(m-y^*)+\phi w^* \qquad \dots \quad (19)$$

(recall $p=w^*-k/_g u^*$ from (4) and (5)).

Clearly, m has a positive influence on the rate of inflation. The introduction of the incomes policy of constant monetary expansion $m=m^*$ is supplemented by an incomes policy $w=w^*$, with that when it is not.

From (19) then, and assuming the stability condition to met with an incomes policy, p tends to

$$p=(pI)=\frac{k}{1+k}(m^*-y^*)+\frac{1}{1+k}w^* \qquad \dots \quad (20)$$

This contrasts with condition (10) where without incomes policy p tends to

$$p=(pN)=m^*-y^*$$

By substitution

$$pI=\frac{k}{1+k}(pN)+\frac{1}{1+k}w^* \qquad \dots \quad (21)$$

$$\therefore \quad pI-pN=\frac{1}{1+k}(w^*-pN) \qquad \dots \quad (22)$$

In other words, given common monetary expansion under the two policies, the rate of inflation will tend to differ over time by the amount by which the wage norm differs from the non-incomes policy equilibrium rate.

The implications for unemployment are rather different. Unemployment will tend towards the natural rate in the absence of the wage norm, whereas with a norm unemployment will rise or fall, dependent upon the rate of monetary expansion. In other words, there is no equilibrium solution for unemployment when there is an incomes policy.

Finally, we should note that cycles in economic activity do not occur under an incomes policy, rather, variables show 'smooth trends'. This contrasts with the non-incomes policy situation where cyclical movements are possible (see (14)). The model thus suggests that cycles in economy will ceteris paribus, occur in the absence of an incomes policy.

Conclusions

In this paper we have investigated, first, the dynamic behaviour of a monetarist model of the economy, secondly, the dynamic behaviour of this model when it is subjected to a 'wages norm' or incomes policy. We found that in the absence of incomes policy a sufficient condition for stability is that found by Cagan in his analysis of hyper-inflation. His model was, however, simpler in that real-output was assumed constant. Our analysis of incomes policy is suggestive that (a) cycles in economic activity will, given a constant monetary expansion, not occur under incomes policy, and (b) that the incomes policy will give rise to a trade-off between inflation and rising or falling unemployment and (c) the critical result that ceteris paribus no equilibrium exists for unemployment where there is an incomes policy.

Notes on Derivation

$p=a-bu-p^e+k(y-y^*)$ from (1) and (4) ... (3)

$u^*=-g(y-y^*)$ ... (5)

$\mathrm{m}=\mathrm{p}+\mathrm{y}-\alpha_1 p^{*e}$ ... (6)

$p^{*e}=\phi(p-p^e)$

sub. (5) into (3) to obtain

$$p=a-bu+p^e-\frac{k}{g}u^* \qquad \ldots \quad (8)$$

sub. (7) into (8) to obtain

$$p^{*e}/_{\phi}=a-bu-{}^{k}/_{g}u^* \qquad \ldots \quad (9)$$

Totally diff. (8) and sub (9) to obtain

$$p^*=bu^*-\phi a-\phi bu-\frac{\phi k}{g}u^*-\frac{k}{g}u^{**} \qquad \ldots \quad (10)$$

From (5) $y=\dfrac{gy^*-u^*}{g}$ ... (11)

Totally differentiate (6) and sub. total differential of (11) and (10) and (9) into resultant. We obtain

$$u^{**}\{1+k-\alpha_1\phi k\}+\{gb+\phi k-g\alpha_1\phi b\}\cdot u^*+\phi bgu=a\phi g-gm^*$$

This is equation (8) of the text.

Incomes Policy

$$p=w^*+k(y-y^*) \qquad \ldots \qquad (1)$$

$$u^*=-g(y-y^*) \qquad \ldots \qquad (2)$$

$$m=p+y\alpha_1 p^{*e} \qquad \ldots \qquad (3)$$

$$p^{*e}=\phi(p-p^e) \qquad \ldots \qquad (4)$$

sub (1) and (2) into (3) resultant to obtain :

$$m=w^*-\frac{ku^*}{g}+\frac{gy^*-u^*}{g}-\alpha_1 p^{*e} \qquad \ldots \qquad (5)$$

sub (4) into (5), and (1) into resultant to obtain

$$gm=(gw^*+gy^*)-u^*(1+k)-g\alpha_1\phi\left[w^*-\frac{ku^*}{g}\right]+g\alpha_1\phi p^{*e} \qquad (6)$$

totally diff (6) and sub (5) into resultant to obtain

$$u^{**}(1+k-\alpha_1\phi k)+u^*(1+k)(\phi)=-gm^*+\phi gm+\phi g(w^*+y^*) \qquad (7)$$

This is equation (15) of the text.

References

Cagan, P (1956), 'The Monetary Dynamics of Hyperinflation' in M. Friedman, Studies in the Quantity Theory of Money. (Chicago : University of Chicago Press 1956).

Carlson, J. A. and Parkin, J. M. (1975) 'Inflation Expectations', 'Economica'.

Friedman, M. (1968) 'The Role of Monetary Policy', 'American Economic Review'.

Friedman, M. (1975) 'Unemployment versus Inflation', 'The Institute of Economic Affairs', Occasional Paper No. 44.

Lipsey, R. G. and Parkin, J. M. (1970) 'Incomes Policy : A Reappraisal', 'Economica'.

Smith, W. (1970), 'On Some Current Issues in Monetary Economics. An Interpretation', 'Journal of Economic Literature'.

Stroonback, G T. and Trividi, P. K. (1975), 'Determinants of Price Change : A Multisector Econometric Study', University of Southampton.

Tucker, D. P. (1966), 'Dynamic Income Adjustments to Money Supply Chages', 'American Economic Review'.

Turnovsky, S. J. (1972), 'The Expections Hypothesis and the Aggregate Wage Equation : Some Empircal Evidence for Canada', 'Economica'.

Vanderkamp, J. (1975), 'A Simple Monetarist Model with a Friedman Twist', 'Journal of Monetary Economics'.

Pattern and Efficacy of Financial Management in Indian Industries Since 1951

B. Kumar*

1. Financial Budgeting

Financial management involves organisation, management and control of inflow and outflow of funds either as fixed or working capital. Fixed assets consist of investment in immovable properties while working capital represents "excess of current assets over current liabilities". The cash flow of working capital is most vital part of financial management because "only when it is converted in cash the profit is realised".[1] If the amount at the end of the circle was less then at the begining a loss would result. Capital management is a continous process which covers issues like determining the volume of capital to be raised, sources of finance and employment of available funds with a view to securing the ends of managment, financial, physical and social.

The various financial issues need designing and application of the technique of budgeting, the most important tool of financial management. Formulation of detailed budgets is necessary for effective capital management. The capital budget forms an integral part of the overall budget of an undertaking. Capital budget assumes varied forms according to the needs of an industry or undertaking. Broadly it has to be divided into (i) Capital budget directed "towards proposed expenditures for project activities" "often requiring special financing" and (ii) Operating budget directed "towards planning and controlling programmes activities". Operating budget consists of sales, advertising and marketing, production and labour, inventory and purchases, maintenance. Many business concerns employ a combination of appropriation forecast and flexible budget for purposes varying from mere forecasting to the establishment of current operating controls and standard of performance."[2]

---

* R. S. P. College, Jharia, Bihar.

In USA operating budgets are known as performance budget. (It was introduced at the suggestion of the Hoover Commission in 1949). The modern technique of management lays greater stress on performance budget which aims as an (i) aid to the appropriate authority, in private or public sector, to determine the expenditure ceiling for each product or activities, (ii) to facilitate managment control over operations and (iii) to help in performance review periodically by both insiders and outsiders to assist the process of decision and policy making.

In India most of the public or private industial undertakings are yet to switch over to the modern technique of capital or financial management. The management patterns of most of the industries are rooted in legacies and tradition of pre-independence era.

Particularly the budget of a public enterprise has also to meet the requirements of accountability. The Estimates Committee in its Report on Budgetary Reform (1958) recommended for preparation of a performance and program budget. The Parliamentary Committee on Public Undertakings had in its 36th Report observed that "The Budget at present is used mainly defining of physical targets against which actual results are compared at the end of the year. If budgetory control is to have meaning, the relationship between the values which are produced by physical results and the expenses involved in achieving them should be clearly understood, measurued and gauged."

The Study Group of the Administrative Reforms Commission on Public undertakings had suggested that budget should be "viewed as a plan and a programme of action—an integral part of the management dynamics which enables the members of an enterperise responsible for the use of resources, to project their ideas into future, and concurrently look back and review the actual performance as compared with promise and intention".[3] The Committee suggested preparation of comprehensive budget embracing production estimates, sales estimates, cost of production estimates, manpower budget, township and welfare estimates; R & D estimates, capital expenditures budget, profit and loss estimates, cash flow estimates and capital employed budget—fixed and working capital.

However any deeper study into captal structure and managment in our country is handicapped for want of sufficient and authentic data. Industrial arena of the economy consists of proprietory, partnership and corporate sectors. There are dearth of data concerning proprietory and pertnership establishments. Data for selected corporate sector are available in raw form from the various studies undertaken by the Reserve Bank of India, the Department of Company Affairs, Census of Manufucture or by the various probe bodies set up from time to time. Although the study of coprorate sector only cannot provide us with the current perspective of the issues involved, it can lead us to broad central tendencies in the annual of capital management. A comparative study of the corporate sector since 1947 is also difficult due to changing methodology of the different studies. Presently the Reserve Bank's studies cover 1650 large and medium and 1125 small companies.

2. Capital Growth : Pattern and trends

The various aspects of the growth and present position of the capital structure of the corporate sector are depicted in the following tables.

Table I

(Growth of corporate sector)

Year		Private sector			Total	
	Public No.	Ltd. Co. Paid-up Cap,	Private No.	Ltd. Co. P.U.C.	No.	P.U.C
1951	12,568	566.5	15,964	208.9	28,532	775.4
1961	6,702	948.2	19,447	870.9	26,149	1818.5
1966	6,392	1465.7	20,216	1559.2	26,678	3044.9
1969	6,535	1833.9	21,438	2026.4	27,973	3860.3
1971	6,534	1908.3	23,878	2393.1	30,412	4301.4
1972	6,678	1956.1	25,885	2696.7	32,563	4652.8
1973	6,841	2059.0	28,032	3286.1	34,873	5365.1
1974	7,174	2123.3	31,161	4943.8	38,335	7075.1
1975	7,493	2231.8	34,270	5165.9	41,763	7397.7

Source : India 1976, & Pocket Book of Econ. Information 1973 & 1974.

Table 11

(Source & Use of funds) (Crores of rupees)

Sources	1971-72	1972-73	1973-74
Internal	474.0	509.3	n.a.
of which paid up cap.	27.5	36.3	62.68
Reserves etc.	117	106	195.4
Provisions	327.9	367	—

External			
of which Paid-up cap.	2.3	1.5	
Borrowings :			
Banks	8.8	—39	
Financial Ins.	—01	—.9	
Current trade liabilities	16.8	16.0	—
Use of funds			
Fixed assets Rs. cro.	377.79	461.24	526.26
Inventories	304.15	149.42	411.83
Loans & advances	117.68	93.00	202.23
Investments Internal & External	7.69	13.59	8.80

Source : R.B.I Bulletin, Supplement Sept. 1974 & Statistical Outline of India 1976 (Tata Services).

Table III

(Percent distribution of sources & use of funds)

Sources	1961-62 to 1965-66	1968-69 (1501	1970-71 companies)	1972-73 (1650 Cos.)
External	50.9	49.7	42.6	30.1
of which paid up	7.6	8.0	2.5	2.1
Banks	18.8	11.5	15.6	5.4
Internal	49.1	50.3	57.4	69.9
Amount (Rs. Cr)	189.1	50.2	70.22	72.9
Use of funds				
Fixed assets	49.9	42.5	32.9	46.4
Inventory	24.2	7.9	36.6	50.5
Investment	1.5	1.2	1.3	1.8

Source : Handbook of Econ. Information, GOI (1973 & 1974).

Table IV

(Major indicators of company finance)

Indicator	1970-71	1971-72	1972-73	1973-74	1974-75
Rate of growth :					
Net worth —	—	6.4	6.1	8.5	15.7
Bank borrowings	—	6.4	—2.6	8.0	26.0
Gross fixed assets	—	7.3	8.3	8.9	10.6
Net fixed assets	—	3.6	5.6	6.7	9.7
Inventories	—	13.7			
net sales	—	12.0	11.1	7.8	27.4
Value of production	—	11.6	9.1	9.2	30.3
Gross profit	—	7.9	5.3	15.8	40.1

	970-71	1971-72	1972-73	1973-74	1974-75
Profit before tax	—	4.0	4.9	20.7	44.2
Profit after tax	—	—3.2	1.8	25.2	44.5
Profit as					
Percent of capital	10.3	10.3	10.2	11.3	n.a.
Percent of net sales	10.3	9.9	9.4	11.4	12.9
Percent of net worth	10.6	9.7	9.3	11.3	14.3
Gross fixed assets to funds		46.0	63.3	49 9	37.4
Gross capital formation	—	83.1	83.8	77.7	81.6
External sources	—	42.3	30.1	43.1	49.1
Net worth to total liabilities	38.2	37.7	37.7	40.7	39.1
Debt-equity percentage	38.4	37.0	36.5	35.1	38.8

Source: R.B.I. Bulletins, Sept. 1974, Jan, 1976.

Table I depicts the growth of corporate sector since 1951. Table II reflects the sources and use of funds of 1650 large and medium companies (capital exceeding Rs. 5 lakh). Table III presents an analytical study of the inflow of funds. Table IV contains comparative indicators of the growth of the corporate finances.

An analysis of the tables reflects the undernoted pattern of the corporate finance and management.

1. The number of public limited companies (table I) had declined from 12.568 in 1951. But the number of private companies have increased two-fold. The paid up capital of public companies have increased four-fold, from Rs. 566.5 crores to Rs. 2231.8 crores while that of private companies have gone up from Rs. 208.9 crores to Rs. 5165 crores. This pronounced bias in favour of private companies indicates tendency for a 'close door' management with little accountability under the Companies Act. The number of Government companies (Central and States) have increased from 142 in 1961 to 450 in 1974. But the capital investment has multiplied from Rs. 547 crores to Rs. 4645 crores at the end of the Fourth Plan.

2. A study of the inflow and employment of funds of the corporate sector reveals that the share of external sources has declined from 51% at the Third Plan to 30% at the end of the Fourth Plan. This indicates expansion of internal resources and greater resort to self-financing. The banks' contribution had also declined from 19.8% during 1961-66 to 5.4% during 1973. Table II reflects that during 1973-74 the paid-up capital constituted only 5% of the total funds while the percentage of reserve and surplus, borrowings from

market and banks contributed to the tune of 15.4%, 17.6% and 12% respectively. This shows shift in the composition and direction of capital flow. The creation of reserve and surplus of Rs. 195.4 crores compared to Rs. 62.68 crores of paid up capital in 1973-74 reveals emphasis on better financial planning and foresight which was considerably absent during pre-independence days.

3. The use of funds (table II) indicates that broadly there in no change in the trends in employment of funds during recent past. It appears that presently about 42% of the funds are invested in fixed assets compared to 56% of the Third Plan period. During 1972-73 the share of fixed assets had gone up to 63%. This reveals a close link between the rate of inflation in the economy and creation of fixed assets in the corporate sector. This constitutes a potential threat for overcapitalisation.

The inventory accounted for 33% against 24% during 1961-66, 37% during 1971-72 and 20.5% during 1972-73. The fluctuation in inventory position is apparently related to the recessionary and expansionary trends in the economy. Investment constitutes a negligible part of the total picture. Whether this is due to lack of investible funds or caused by speculative tendency is difficult to determine.

3. The position of selected major industries pertaining to capital invested and output is given in table V.

Table V

Industry	Capital invested in Rs. crores			Percent in	
	1955-56	1968-69	1972-73	total invest.	output
Coal Mining	14,5	14.3	n.a.	n.a.	n.a.
Sugar	31.2	37.2	45.3	3.7	5.0
Jute	n.a.	26.5	29.5	9.5	16.3
Iron & steel	33.8	77.6	77.6	13.8	8.0
Cement	25.2	52.7	73.8	1.4	1.4

Source : Handbook of Econ. Information 1973-74. G.O.I.

There seems to be no direct relation between the capital invested and their share in total output.

4. A regionwise study of corporate sector reveals wide disparity in the regional growth of industries. Out of the total number of 41,763 companies and their paid up capital of Rs. 7398 crores (1975 March) the share of selected States is given in Table VI.

It seems that the regional dispersal of industrial sector has been in favour of selected states—Delhi tops the list because the Head

Offices of most of the companies are located there. Bihar ranks second due to heavy concentration of public sector investment. There appears to be little relevance to the amount of capital and the state of industrialisation in the State. The most industrialised State of Punjab does not figure in the above list. (P.U.C. 200 crores more).

Table VI

(Share of selected States)

State	No of Cos.	Paid up capital Rs. Cr.
Bihar	685	1582.3
Mahararastra	9358	987.5
West Bengal	10,759	765.8
Delhi (UT)	4,765	2085.4
Uttar Pradesh	1,907	139.3
Karnataka	1,624	321.1
Andhra	1,143	211.0
Gujarat	2,116	313.0
Tamilnadu	3,707	422.0

Source : India, p. 167, (1976).

5. An important indicator of the growing health of the company finance is debt-equity ratio. Since 1970-71 the ratio seems to be constant around 38.62. In 1961 the Finance Ministry decided that each Project will be financed on the basis of approximately half its capital being in the shape of equity and rest being in the shape of loan.[5] On this criterion the performance is appreciable.

6. A Reserve Bank's study[6] on the working of the small companies (having capital less than Rs. 5 lakhs) reveals wide gap between tho managerial performances of the small companies as compared to the working of large and medium corporate sectors. During 1972-73 their net worth had declined by 0.1% while their gross fixed assets increased by 8.6%, inventories by 7.4% and sales by 10.6%.

7. An important yardstick for measuring the efficacy is capital. Management is the method employed for raising additional capital. The public response to the new issues measures the confidence of the investors in the ability of the corporate sector. According to the RBI, "it is found that the public response to equity issues during 1973 was significantly better than in 1972 though it was not so in respect of preference share issues".[7] The underwriting support by the financial institution was also lower in 1973 because financial institutions were reluctant to underwrite issues of small companies.[8]

8. Concentration of capital in the hands of selected industrial houses as revealed by the Mahalonobis Committee, Monopoly Enquiry Commission and Industrial Licensing Policy Enquiry Committee is a distinct feature of the corporate management in our country. This leaves little scope for application of capital management technique at company or Board of Directors level. Capital management of these Groups has become a family and not corporate affairs. There is a dearth of information, besides the reports of the probe bodies about the method and structure of capital management of the inter-linked or inner circle companies of these Groups.

9. With emergence of a well developed capital market in the country during last three decades the volume of term assistance from the term lending institutions has gone enormously as is shown in Table VII. The table reveals that the rupee loan dominated the scheme of financing. Underwriting and direct subscription show marginal increase. Financial institutions are reluctant to underwrite the issues of small companies although one of the important objectives of setting up these institutions was to encourage new and small entrepreneurship.

Table VII

(Assistance from term lending institutions)

	Crores
Rupee loan sanctioned	Rs. 2409.9
disbursed	1792.2
Underwriting & direct sanctioned	506.9
disbursed	346.0
Foreign loan sanctioned	375.2
disbursed	278.3
Total sanction	3291.1
disbursed	2416.5

From the date of their inception till 1975 (March)

Source : Annual Report of the IDBI, 1974-75.

3. Efficacy of Financial Management

To measure the efficacy of financial management in Indian industries four tests could be applied (i) Social accountability and Growth
(ii) Technical analysis
(iii) Financial analysis and
(iv) Productivity analysis.

1. *Social and growth analysis*: That industrial units area are a social entity is a recognised fact of the modern management. Industrial development plays a crucial role in promoting the economic growth and social profitability in the country. Judged from the standpoint of growth the contribution of industrial sector has been rising. The share of industrial sector in total output has increased 16% in 1950 to 24% in 1976. The weightage of basic and capital goods in the Index of industrial output has increased from 28 to 50. The Index of Industrial Production (base 1960) had gone up from 54.8 in 1950-51 to 201.8 in 1974-75. The rate of import substitution in major industris has been rising steadily. However the growth rate of industry has been most vacillating. From 7.5% in the First Plan it went up to 8.7% in the Third Plan. But during 1974-75 it fell to 2.5% and again rose to 5.7% in 1975-76. The net assets of companies had gone up from Rs. 156 crores in 1955 to Rs. 796 crores in 1972-73. A lack of consistence appears in the rate of capital formation. During 1956 it was 15.9%, in 1961 it was 9.5%, in 1970-71 it was 7.9% while during 1974-75 the rate was 16.3%. The fluctuation in growth rate may be beyond the control of a single enterprise. However it suggests instability in the field of capital management, particularly the outflow of funds.

2. *Techinical Analysis*: Industrial production is a technical process. The ability of a management can be judged in terms of application of best technical know-how to achieve the objectives of managment. The cost of production is the best measure of technical superiority. The existence of considerable amount of underutilised capacity in basic and critical industries, public and private sectors both, reflects on the defective technical planning and execution. Rationalisation has still remained a far cry in the Indian industries since 1951. During 1974-75 out of 106 public enterprises only 54 were utilising more than 75% of their capacity, 27 between 50-75% and 19 below 50%. In major industries like cotton textile, sugar, jute, etc, the number of ill and uneconomic units are galore.

3. *Financial Analysis*: The performance of capital management is traditionally analysed in terms of financial success. The rate of return on capital i.e., profitability constitutes cornerstone of the success of an enterprise. Table IV analyses the rate of profitability from various viewpoints. In terms of capital employed the profit has gone up from 10.3% in 1970-71 to 11.3% in 1973-74. Similarly the profits to net sales have gone up from 10.3% to 12.9% and to net worth from 10.6% to 14.3%. In 1965-66 the rate of return on capital was 10.1%.

An industrywise analyses reveal fluctuating position. During 1973-74 the Silk and Rayon Industry recorded the highest rate of profitability, at 20.5%, jute and cement recorded lowest i.e. at 0.8% and 2.8% respectively. In spite of the high and stable rate of return 103 large companies out of 375 studied by the RBI declared no dividend during 1974-75 while 67 declared dividend at a rate below 8%. This conservative outlook on dividend has been to a large extent responsible for sluggish growth of investment climate in the country. The rate of interest on debenture had not exceeded more than 9%.

The lower rate of dividend has caused the flow of savings towards banking sector where greater return as well as security is assured. In turn the industries have to seek assistance from the banks or term lending institutions at a much higher rate of interest than what they could have mobilised at a lower rate of dividend. Depressed rate of dividend also suggests provisions for writing off overcapitalised or watered portion of capital.

The determination of the marginal efficiency of capital can also provide us with a more reliable guide to the stability and efficiency of capital management. In Keynisan analogy marginal efficiency of capital can be determined by taking into account the rate of expected yield i.e. profit and the replacement cost of renewable assets. Due to lack of sufficient data in these respects it would be hazardous to attempt any such task.

4. *Productivity* : The ultimate test of efficacy of employment and managment of money capital is the generation of physical goods. Capital-output ratio and input-output analysis are two important indicators. Generally 2:1 or 3:1 capial output ratio has been taken as satisfactory. Input-output analysis has been attempted, to some extent, in the Fifth Plan projections. Since 1960 the Plan documents have also omitted the capital-output analyses. For earlier plan periods the input-output projections are not available. Even the Draft Fifth Plan document states that "detalied exercises for determining the output-input structure for the perspective period has been hampered by inadequate information about input-output coefficient for different sectors of the economy."[10]

From figures in table IV it appears that the value of production during 1970-71 to 1974-75 has gone up from 11.6% to 30.3%. But the increase appears to be inflationary, to some extent, and not real entirely as the industrial growth rate of the Fourth Plan period suggests.

It is true that sluggish and erratic productivity contours of the various industries are partly due to factors which lie outside the perview of capital managment. However the non-flexible structure of the use of funds and rigid cost structure of some of the traditional industries indicate lack of manoeuvrability according to the exigencies of the situtioa.

4. Conclusion

1. Management of capital in most of the Indian industries is still moored to the traditional legacies and practices. This is true for both the private and the public sector.

2. Modern tools of managment including capital management like performance budgeting, cost control, organisational development or R&D etc, are yet to be popular with the captains of our industry.

3. There are lack of data in the field of marginal efficiency of capital, input-output analysis, technical co-efficients etc which render a currect evaluation of issues difficult.

4. The prepondernce of proprietory, partnership and private companies have made the industrial units a closed shop. Industrial management of these sectors veers round family complexes about which we have little information.

5. On the basis of four tests applied for measuring the efficacy of capital management it is difficult to make any conclusive generalisation. However the social obligations, growth portents, technical feasibilty of financial planning and flow and physical productivity need better re-orientation and gearing up of capital management practices.

References

1. Management Accountancy by Brown & Goward p.50.
2. Dictionary for Accountants by Prentice Hall p,67.
3. ARC's Study Grown Roport P.165.
4. Pocketbook of Econ Information, GOI, P.94.
5. Letter dated 13 June, 1961.
6. 7. RBI Bulletin, Jan, 1976.
8. RBI Bulletin p. 1974.
9. Draft Fifth Plan, vol. 1, P.8.

Modern Technology and Human Labour Utilization in Developing Countries—A Sample Study in India

G. S. Lavania[1], M. M. Bhalerao[2] and B. L. Jain[3]

Developing countries are mostly characterized by a capital hungry agriculture where labour is not at all a major constraint in increasing agricultural production. Labour resource is abundant in supply but the paradox of labour use is such that during certain seasons acute scarcity of labour is felt. Thus, it is commonly observed that because of the seasonal nature of agricultural industry and because of inadequate irrigation facilities contributing to low level of intensity of cropping as well as intensity of cultivation, there are certain seasons when acute scarcity of labour is felt, while there are also seasons when there is practically no work for the labour. As observed by Prof. Nurkse, agriculture in the developing countries is generally faced with the problem of disguised unemployment. The solution lies in utilizing the surplus labour more productively for building up long term assets within the agricultural sector. This, however, is only a partial solution to the problem. The main problem is of seasonal unemployment which could be solved by undertaking measures to provide increased and continuous employment on the farm. This can be done by the adoption of modern technology which is capital ar well as labour intensive and is expected to bring about desirable changes in the intensity of cultivation, intensity of cropping as well as the crop-mix. This in turn is expected to increase total employment opportunities on the farm and provide a more or less continuous employment for the labour on the farm throughout the year. The present paper, therefore, aims at finding out the impact of modern technology on : (i) the crop-wise employment of labour on the farm,

---

1. Professor & Head, Department of Agricultural Economics, Faculty of Agriculture, Banaras Hindu University.

2. Reader in Agricultural Economics, Faculty of Agriculture, B. H. U.

3. Asstt. Professor, R. A. K. Agriculture College, Sehore, M.P.

(iii) composition of human labour employment on the farm, viz. male, female and child labour, and (iv) seasonal utilization of human labour.

Materials and Methods

Data for the present paper have been obtained from the study conducted in Sehore block of Sehor district in Madhya Pradesh. The data were obtained by survey method and relate to the period 1975-76. The study covers a stratified random sample of 60 adopter farmers as well as 60 non-adopter farmers selected from 6 villages in Sehore block, which had highest proportion of their gross cropped area under high yielding varieties. Adopters have been defined as those farmers who have at least 20 per cent of their gross cropped area under high yielding varieties.

The region of study, namely, Sehore block is situated in the western part of Madhya Pradesh. The population of the block in 1971 was 1.59 lakh and the area 1584.25 sq. kms. Mostly black cotton soils are found in the block and the main crops grown are wheat, jowar, gram, paddy, maize, sugarcane and fodder crops. The average annual rainfall of the block is about 150 cms. Of the gross cropped area in the block about 10% is irrigated.

The Sample Farms

Average size of operated holding for the sample farms is about 7 hectares. Intensity of cropping among adopters is 161 and for non-adopters 137. Wheat, jowar, sugarcane, paddy, maize and gram are major crops grown by sample farmers. The average size of family for adopters is 6.80 while it is 6.26 for non-adopters. Proportion of family members in the labour force among adopters is 48.2% and in non-adopters it is 49.3%. Proportion of literate members among adopters is 25.80 per cent and among non-adopters 23.08 per cent.

Results

(1) *Impact on Cropwise Employment of Labour on the Farm*

The impact of modern technology on the cropwise employment is analysed with the help of comparison of human labour employment on adopter and non-adopter farms for the farm business as a whole as well as for the four major crops, namely, jowar, paddy, maize and wheat. These estimates are worked out in Table 1.

Table 1

Employment of human labour per hectare in farm business and major crops by size of farm

Farm size (hectares)	Adopters	Non-adopters	Adl. utilization on adopter's farm	%increase over non-adopters
Farm business				
Below 2.00	124.89	107.12	17.77	16.59
2.00—4.00	121.54	102.92	18.62	18.09
4.00 & above	111.55	93.59	17.96	19.19
All farms	113.47	95.54	17.93	18.77
Jower				
Below 2.00	97.68	82.47	15.21	18.44
2.00—4.00	88.37	73.53	14.84	20.18
4.00 & above	80.93	65.85	15.08	22.90
All farms	82.05	67.49	14.57	21.57
Paddy				
Below 2.00	116.66	98.83	17.72	17.93
2.00—4.00	103.45	90.63	12.82	14.14
4·00 & abyve	92.27	81.45	10.82	13.28
All farms	96.79	85.21	11.59	13.59
Maize				
Below 2.00	119.42	95.24	24.18	25.39
2.00—4.00	114.63	86.94	27.69	31.85
4.00 & above	105.35	81.17	24.18	29.79
All farms	107.61	83.33	24.28	29.14
Wheat				
Below 2.00	173.57	148.75	24.82	16.69
2.00—4.00	162.25	139.33	22.92	16.45
4.00 & above	152.75	124.45	28.30	22.74
All farms	154.83	127.96	26.83	21.00

It can be observed from the table that human labour employment for all the four crops as well as for the farm business as a whole is higher on adopter farms and the employment per hectare decreases with the increase in the size of farm. For the farm business as a whole adopter farms provide about 19 per cent more employment in terms of man-days per hectare whereas in paddy they provide 13.59 per cent higher employment, in wheat 21.00 per cent higher, in jowar 21.57 per cent higher and in maize 29.15 per cent higher employment.

In case of jowar the excess percentage of employment provided by adopter farm over non-adopters increases with the size of farm while in paddy it decreases and in case of wheat and maize it does not exhibit any definite trend. The percentage difference between adopters and non-adopters in human labour employment is highest in maize followed by jowar, wheat and paddy.

Statistical Significance

To test the statistical significance of the difference between adopter and non-adopter farms with regard to employment of human labour, normality test (T-test) is used and it is observed that the difference is significant at 1% level. It can, thus, be concluded that technological changes have created a significant impact on the employment of human labour, in the sense that farms adopting modern technology indicate significantly larger employment opportunities.

(2) *Impact on Family and Hired Labour Employment*

The impact of technology changes is considerably higher on hired labour employment than on family labour employment. This is evident from the table which shows considerably higher percentage of employment on adopter farms than on non-adopter farms for all the four crops as well as for the farm business as a whole. Further, it is seen that in case of family labour the impact of technological changes is greater on small farms for the farm business as a whole while for hired labour it is maximum on medium farms followed by large farms and small farms. As regards the four major crops, the impact does not indicate any definite trend in relation to the size of farm except in case of jowar where for family labour it increases with the size of farm and for hired labour it decreases with the increase in the size of the farm. As regards family labour, maximum impact is observed in case of jowar followed by maize, paddy and wheat while in case of hired labour maximum impact is observed in case of maize followed by wheat, jower and paddy.

Statistical Significance

The statistical significance of the difference between adopter and non-adopter farms with regard to family labour is tested by T-test. The difference is significant at 5% level showing that the technological changes have created a significant impact on the employment of family labour.

The difference between adopter and non-adopter farms with regard to hired labour employment for the farm business as a whole is highly significant at 1% level. This indicates that technological changes have created significant impact on the use of hired labour in the sense that they have provided per hectare higher employment to the hired human labour in agriculture.

(3) *Impact on the Composition of Human Labour Employment on the Farm*

Estimates of employment of male, female and child labour per hectare for the farm business as a whole are worked out in Table 2 for adopters and non-adopters both. The table reveals that the impact of technological changes is maximum in case of child labour followed by female labour and male labour. As regards the impact on female

Table 2

Employment of male, female and child labour per hectare in farm business by size of farm

(Days)

Farm size (hectares)	Adopters	Non-adopters	Adl. utilization on adopter's farm	% increase over non-adopters
Male				
Below 2 00	99.19	85.29	13.90	16.30
2.00—4.00	88.85	77.95	10.90	13.98
4.00 & above	75.58	66.28	9.30	14.03
All farms	82.20	71.51	10.69	14.95
Female				
Below 2.00	18.70	17.51	1.90	6.80
2.00—4.00	23.70	18.85	4.85	25.73
4.00 & above	25.80	19.79	6.01	30.37
All farms	22.54	17.99	4.55	26.70
Child				
Below 2.00	7.00	4.32	2.68	62.04
2.00—4.00	8.89	6.12	2.77	45.26
4.00 & above	10.17	7.52	2.65	35.24
All farms	8.73	6.04	2.69	44.54
All labour				
Below 2.00	124.89	107.12	17.77	16.59
2.00—4.00	121.54	102.92	18.62	18.09
4.00 & above	111.55	93.59	17.96	19.19
All farms	113.47	95.54	17.93	18.77

labour it is observed that it increases with size of farm whereas in case of child labour it decreases with the increase in the size of farm. For male labour there is no definite trend but it is highest in case of small farms and lowest for medium farms.

Statistical Significance

The difference in the employment of male, female as well as child labour on adopter and non-adopter farms is significant at 1% level. It indicates that technological changes have resulted in significantly higher employment of male, female as well as child labour.

(4) *Impact on Seasonal Utilization of Human Labour*

Estimates of seasonal utilization of total human labour per hectare for the farm business as a whole, on adopter as well as non-adopter farms, are presented Table 3. The table reveals that the maximum impact is in the month of June followed by May, February, December, January and September. Minimum impact is in April followed by November. This can be explained by the fact that in May and June adopter farms apply considerably higher man-days of labour than non-adopters mainly for the preparation of land for high yielding varieties of crops.

Table 3

Seasonal employment of human labour per hectare in farm business

Months	Adopters	Non-adopters	Addl. utilization on adopters' farm	% increase over non-adopters
June	4.91	2.19	2.72	24.20
July	12.18	12.07	0.11	0.91
August	13.11	10.59	2.52	23.80
September	10.49	8.40	2.09	24.88
October	13.96	12.42	1.54	12.40
November	10.38	10.23	0.15	1.47
December	7.38	4.63	2.75	59.40
January	6.69	5.22	1.47	8.16
February	3.12	1.88	1.24	65.96
March	12.13	11.86	0.27	2.28
April	12.08	12.03	0.05	0.42
May	7.04	4.02	3.02	75.12
Total	113.47	95.54	17.93	18.77

Statistical Significance

The monthly variations in employment of human labour from the average monthly employment on adopter farms is non-signficant at 1% level. This indicates that there is no significant variation in monthly employment of human labour on adopter farms. The variation in employment of human labour from the average employment on non-adopters farm is significant at 1% level. This indicates that there is significant variation in monthly employment of human labour on non-adopter farms. The difference between adopter and non-adopter farms with regard to seasonal employment of human labour is significant at 1% level. It indicates that technological changes have created significant impact on human labour employment during different months.

Conclusion

The above analysis indicates that for the farm business as a whole modern technology has significantly contributed to increased labour utilization by about 19% for the farm business as a whole ranging from about 14% in paddy to 29% in maize. The impact of modern technology on utilization of labour is much higher in case of hired labour than in family labour. As regards the impact on the composition of human labour, it is observed to be highest in child labour followed by female labour and male labour. The seasonal impact is highest in the month of June followed by May, February and December. Modern technology has also helped to provide more regular and continuous employment throughout the year reducing the monthly variation. The policy implications of the study are that for increasing the employment opportunities within the agricultural sector as well as for levelling the seasonal fluctuations of demand for agricultural labour it is necessary to accelerate the adoption of modern technology through an aggressive extension agency and an efficient input supply system as well as through a rapid increase in the irrigation facilities.

Review

Maximum Political Freedom, Published by Andreas & Co, Porthmadog, Gwynedd, Wales/GB, 1976, Price £6.50.

Capitalism or socialism (communism)—the world is to choose either. This is the common notion of the day. But the world's growing confusion with the both makes it think about a third alternative in synthesis of capitalism and socialism. The work under review is an excellent attempt to that end. Its formulation of Central Policy reflects the Objective attitude "how can we all live our lives so that *no one* exploits or restricts the freedom of anyone else". This demands at the first instance a formal end of both exploitation between individuals and excessive interference by government. That is the world should be freed from restriction of freedom and exploitation which is *allowed* in a capitalist society and *created* in a socialist society. This aspect is reflected in the Objective Politics. A comprenensive study is made of Objective Politics in theory, practice and results. The last one gives the new concepts of home, work and living.

The dashes of the thoughts of the work may seem an idle exercise to both idealists and materialists, nonetheless their thorough provocations will keep them wondering whether the social dynamism can be confined to a particular system.

International Monetary Issues and Development Policies, Xenophon Zolotas, Bank of Greece, Athens 1977.

The volume contains select essays and statements of Xenophon Zolotas published in honour of his thirty years' of membership on the Board of Governors of the IMF and for his service as Governor of of the Bank of Greece from 1955 to the present, save for a short spell of time.

Governor Zolotas contributions to international monetary issues and development are widely accepted as decisive in influencing the formulations of IMF policies. The editors have topic-wise chronologically placed his writings in two parts. In Part One the valued contributions are about the problem of gold leading to international liquidity problem and his question-mark on managed float. Part Two finds development policies for the study of economic development on the back of finance, monetary planning and private initiative and also of the role of human factor. His various statements at the annual general meetings of the Board of Governors of the IMF mark his profound originality in thoughts and interest in monetary problems of the world. His thoughts on prerequisites for international monetray order (1975) and toward a reorientation of international monetary policies (1976) had immense practical values. He sought the cooperation of both the developed and the developing countries in the new IMF. But it seems the latter have been denied their due place in it.

The researchers in international monetary problems will find this volume extremely useful.

The Economics of Developing Countries, R. N. Triparthy, 1977, The World Press Private Limited, Calcutta, Price Rs. 20.00.

The book studes the economic development of developing countries with a strong eye to bring out the causes of failures of these countries to mitigate the basic economic and social demands like unemployment and poverty of teeming millions. He suggests formulations and implementation of 'correct' economic policies as an alternative.

The study is divided into seven chapters to cover the growth factors. Starting from sources of growth and growth rates of less developed countries, he goes over development strategy, then reviewing the choice of techniques in the chapter of appropriate technology suggests the appropriate one driving to the value and use of labour surplus and the sector of agricultural technology. Employment and economic development having fully covered he dwells on exports and economic growth and finally ends up in the role of foreign aid. Although the work is not a path-breaking in economic analysis of a less developed countries, yet the manner in which the author has combed up the growth factors that have failed in a less developed country and referred to the factors that have the security of success in a less developed country will provoke wide attention and appreciation.

Gandhian Call of 'Back to the Village' and Planning from Below

Sujit Kumar Ghosh*

India is a land of villages and in the words of Mahatma Gandhi "all that is good in Indian culture is based on rural life." Having a close look at the economy of India also, it becomes patently clear that this economy is basically rural, judged by the composition of gross domestic product and that of the total employed work-force. Hence within this set-up it is quite imperative that economic planning in this country must start from below where the model of rural development must have its affinity with the Antyodaya philosophy of Mahatma Gandhi. This philosophy of Mahatma virtually enunciates the ideal that in the process of growth the last man is to benefit first and that the focus of attention must be laid upon adequate amount of planning at the base which is to be neatly co-ordinated with the apex-planning or planning from above. In fact, keeping in view the supreme importance of the idea of planning from below against the perspective of Indian economy, we can best evaluate the significance of Gandhian approach to the uplift of India's village economy as a precondition of the broad-based and all-comprehensive economic development of India.

The point of note is that even though agriculture occupies a vital position in the firmament of Indian economy, the pattern of development of our rural economy and hence that of the over-all economy exhibit the features of underdevelopment. It is evident that India's rural economy inheres a dual character. Looked at from the viewpoint of relationship existing among landlord, tenant, share-cropper and agricultural labour in the village society there is a strong point in asserting that there exists institutional dualism and depending upon that technological dualism in our village economy. Income distribution is naturally quite skewed in this sector and the large majority of the rural population which, in its turn, constitutes the

* Ramakrishna Mission Vidyamandira, Howrah, W. B.

biggest chunk of the total Indian population, is trapped in vicious circle of poverty. From this it fairly follows that the market contribution of this sector, which is the biggest one in Indian economy, to the other sectors becomes extremely limited, thereby leading to, in an extreme situation, the demand recession confronting the latter. Again, in India it is palpably true that the structural changes in the economy have not been proceeding in such a way that the other sectors can play vital roles in relieving the rural sector of the spell of its grinding poverty.

It is against this background that we can appreciate the utmost importance of the revival of our village economy. In fact, uplift of Indian villages, based on the growth of villages and agro-based industries, under the set-up of village swaraj and the decentralised pattern of agro-industrial production, suitable for balanced regional economic development constitutes the kingpin of the strategy of Gandhian economic development. Gandhiji's ideal of village swaraj stands for growth of self-contained, self-supporting and self-regulated villages within the framework of democratic decentralisation. In the words of Gandhiji, 'My idea of village swaraj is that it is a complete republic, independent of its neighbour for its vital wants and interdependent for many others in which dependence is a necessity."

Within the set-up of democratic decentralisation the philosophy of planning from below can be best experimented. In the process of economic planning there is a path which runs from the operating units to the centralised planning authority. In this process the formulation of the sectoral plan, in part, becomes the responsibility of the operating units. For this the village panchayets like those as exist in India should be energised and there must be a fair local assessment of the prevailing resource position, economic advantages, market situation, etc. Depending upon proper demand and supply projections certain proposals may flow from the units of operation to the centralised planning authority. Again it is natural that certain directives emanating from the apex authority redound to the lower levels where actual production operation is going on. Hence there is always a two-way process in the working of democratic planning and here the effective co-ordination of base planning and apex planning is the sine-qua-non of democratic planning which is a negation of centralism in planning.

The point of note here is that it is in such a decentralised democratic set-up that the planners may realistically hope for securing a 'cross-wise' balance in terms of adjustment between output targets and resource endowment and hence production and investment planning must in the different sectors closely correspond to the resource position of these sectors. This is a way to minimise the evil effects of the forces of inflation, unemployment and underemployment. Here, we find a type of balanced growth in terms of output-resource adjustment which must be the realisable target in democratic planning like that of India. The philosophy of 'Antyodaya' of Mahatma Gandhi which is founded on the idea of development from below becomes in this case the prime requirement. Community development scheme which relates to development within and which emphasises on much better social mobility and social interaction, mobilisation of local resources and village level and block level planning coupled with Panchayeti Raj best fit into this requirement. This amounts to a direct negation of 'organisation gap' in planning which, in particular, has been acting as a vital constraint standing in the way of progress of Indian plans. Any type of deviation from 'cross-wise' balance, as indicated earlier, may either result in underutilisation of resources, both human and non-human, or lead to cost inflation consequent upon excessive pressure on the limited stock of resources. To obviate such types of instability crisis the prime necessity is to close the 'organisation gap' through promoting base planning.

This calls for, as is relevant in Indian context re-orientation of the system of planning for agriculture and village industries. Our paramount objective in course of planned efforts should be to rejuvenate our moribund village economy and preserve our pristine culture. Here, the growth of agricultural productivity through the concentrated doses of investment of improved input varieties and better water management facilities, diversification of agricultural production, multiple-cropping and development of village khadi and crafts must be of primary importance. As for village industries, in particular, Mahatmaji advocated the idea of interdependence in the case of khadi and other village industries. Having in mind such an inter-industrial nexus within the bound of village economy he once articulated that "villagers to be able to occupy their spare time profitably the village life must be touched at all points."

According to Mahatma Gandhi "Khadi is the sun of the village solar system. The planets are the various industries which can support khadi in return for the heat and the sustenance they derive from it. Without it, the other industries cannot grow." Mahatmaji identified khadi with the spinning wheel. He held that "without the spinning wheel, there was no swaraj." What occurred to him was that "Were we not under the hypnotic and desolating spell of the city civilisation, we would realise through our hearts that only a little combined, conscious and honest effort in the shape of work is required to take the wheel to every cottage in India. Multiply the return of one wheel by say one hundred million and the result will convince the most confirmed unbeliever of its potency." Explaining the rationale behind the strategy of promoting the growth of village industries Gandhiji wrote "we should restrict our purchases to the articles which the villagers manufacture. Their manufacture may be crude. We must try to induce them to improve their workmanship, and not dismiss them because foreign articles or even articles produced in cities, that is, big factories are superior. In other words, we should evoke the artistic talent of the villager. In this way shall we repay somewhat the debt we owe to them...If we as individuals believe that revivification of India's villages is a necessity of our existence,... we must mentally go back to the villages and treat them as our pattern, instead of putting the city life before them for imitation... If we perform the mental trick and fix our gaze upon them, we immediately put millions of rupees into the pockets of the villagers whereas, at the present moment we are exploiting the villagers without making any return worth the name." Gandhiji held that reproduction of city life in the villages would be tolerable if more and more cities could be brought into being, accomodating some millions of people, which, according to him, "is much more impossible than the one of reviving the village industries and stopping the progressive poverty, which is due as much to enforced unemployment as to any other cause."

There is no denying the fact that khadi is an useful industry which can fairly create supplementary source of income for the scores of average Indian agriculturists who, more often than not, are faced with the grim consequences of enforced seasonal idleness and Gandhiji wanted the masses to imbibe the truth that "their economic welfare lies in the manufacture of khadi in their own cottages through hand-spinning." Of course, one very useful purpose to be served through khadi at the time when Mahatmaji preached and propagated the khadi spirit was to effect the boycott of foreign-made cloth and to stop exploitation of Indians in the hands of British ruler that was perpetrated through 'Economic Drains' from India. After all, the primary aim in working out the khadi programme should be purely humanitarian and economic and in the words of Mahatma Gandhi "we should bring food to the mouths of the people through khadi."

As a matter of fact, the basic Gandhian strategy encompassing the growth of khadhi and village industries centres on the ideas of self-adjustment and development within and it is principally the question of re-organisation of the village economy. In the present Indian context this concept of re-organisation is most vital and useful when our planned efforts are directed toward reviving our village economy through crash programmes in the frontiers of production and employment. In view of the fact that structural changes within Indian economy are not taking place in such a revolutionary manner that we may hope for immediate absorption of the huge army of rural unemployed and underemployed in gainful work in the secondary and tertiary sectors, ways must be found out through re-organising our village economy so as to put the unutilised and underutilised human resources in the villages into gainful and productive employment within the rural sector of our economy. What is more, there is always the fear of demand recession facing the urban and manufacturing sectors of our economy, if the village sector which is the largest one cannot afford to make market contribution for them. Lack of growth of our village economy is admittedly a crucial factor responsible for the low rate of utilisation of the existing installed capacity and also for the lack of creation of new capacity in the cases of the urban-manufacturing and service sectors. Therefore, the underlying cause of the arrested growth of Indian economy and that of the perpetuation of poverty must be traced to the stunt growth of the village economy of India. Hence, the tremendous importance of 'planning from below' along the Gandhian way in our case.

But all our above propositions must not mean relegation of modern large scale, big and heavy industries, symptomatic of technological progress and machine civilisation, into utter insignificance. Mahatmaji himself did not disapprove of modern machines and he believed in the necessity of some key, basic and heavy industries on whom a large number of industrial units depend for their growth and survival. In fact, Ghandhiji strongly objected to the misuse and excessive use of machineries and, in his opinion, "Mechanisation is good when the hands are too few for the work intended to be accomplished. It is an evil when there are more hands than required for the work.... Every mill-hand does the work of at least ten labourers doing the same work in their villages...he earns more than he did in his village at the expense of ten fellow villagers. Thus spinning and weaving mills have deprived the villagers of a substantial means of livelihood. It is no answer in reply to say that they turn out cheaper, better cloth. For, if they have displaced thousands of workers, the cheapest mill cloth is dearer than the dearest khadi woven in the village."

True that the large scale heavy industries have good deal of external economy and both 'forward' and 'backward linkage' effects. In this case, there must be strong complementary relation existing among the large and small, the heavy and light industries in a situation of industrial inter-dependence. The large scale and heavy industries here thus appear to be the promoter of growth by creating demand for the outputs of the smaller and lighter units and also by helping them to modernise and raise their efficiency. The smaller units, in its turn, in this process thus can create fair amount of industrialisation effects. On the one hand, we ought to encourage such a situation of complementarity to obtain in the industrial world of India and on the other hand, must go in for a strategy of industrial development relying heavily on high labour-investment ratio' and low capital-output ratio. It is quite significant that the projects having low capital-labour and capital-output ratios mean increasing employment with rising output. In a capital-poor economy it is prudent to economise capital. But when output becomes high per unit of capital, used in small amounts, it indicates that the productivity of labour, which is used in larger amounts as complementary or co-operating factor alongside capital and supplements the deficiency of capital, must be positively high. Thus, for our village industries the be-all-and-end-all of our policy must be to ensure the co-existence of low capital-labour and low capital-output ratios. Our village economy, above all, is to be poised for making the desired product contribution, employment contribution, market contribution and ensuring good productivity effects in order that it can give the entire economy a major forward thrust.

The kingpin of Gandhian strategy is, after all, 'planning from below' and it tantamounts to the call of 'back to the village'. Back to the village is no retrogressive step. In the words of Mahatma Gandhi "Is it going back to the village, or rendering back to it what belongs to it? I am not asking the city dwellers to go to and live in the villages. But I am asking them to render unto the villagers that is due to them." In Indian context it is quite apparent that economic development which means economic growth accompanied by stability, welfare and distributive justice comes out of the effective working of the philosophy of "planning from below." It is here that the model of rural development to be followed primarily aims at bringing the economically handicapped population and regions of the country into the mainstream of economic activities and bringing them their due shares of development. In his thoughtworld Gandhiji projected the idea of industrialisation of village economy which is based on the pattern of decentralisation of agro-industrial production. According to him, "industry should be distributed throughout the country and not concentrated in large industrial cities". Above all, the entire process of production and distribution should be oriented towards securing both economic and real progress, that is, both material well-being, to the required extent, and moral uplift in the interest of the good of all. World of matters and world of values must cohere for the real economic development to come.

References

1. The Complete Works of Mahatma Gandhi—Vol. 37 (1928), Publication Division, Ministry of Information and Broadcasting, Government of India.
2. The Complete Works of Mahatma Gandhi—Vol. 42 (1929-30), Publication Division.
3. The Complete Works of Mahatma Gandhi—Vol. 46 (1931), Publication Division.
4. Mahatma, Vol. IV, by D. G. Tendulkar, (Publication Division)
5. 'Landscape of Gandhian Economics—Our Planners' Paradise' by Sujit Kumar Ghosh, Modern Review, July 1976.

A Note on Gandhian Economics

A. K. Sur*

Gandhiji has generated more emotive sentiment than constructive action. Since the time of India's first Prime Minister Pandit Jawaharlal Nehru down to today, he has been frequently mentioned as a guiding star for economic regeneration of the country, but his teachings have very little translated into action. Though Gandhiji was not a professional economist, yet his pragmatic teachings on the economic salvation of the country needed to be well minded. The economic lessons he sought to give to the nation were not founded upon what could be found in the economic literature of his time. He seemed to have read no orthodox economic treatise. Indeed, if he had read them, he could not have evolved his own economic theory about the economic salvation of the country. His economic theory was neither that of Marx or Keynes. It was an economic theory of his own and can aptly be called the Gandhian theory of economics. As a matter of fact, in the making of his economic theory he appeared to have been greatly influenced by those who were not economists e.g. Thoreau, Ruskin and Tolstoy. In his theory, the economic endeavour of man was not a soul-killing process. He conceived it to have an ethical basis. He had the central vision of man as a moral and spiritual being. He had the conviction of the moral worth of labour. He thought that even if the body be crippled by absence of material things to meet the needs of the call of the flesh, man can yet have purifying senses to create works of art and beauty. To prove his thesis he cited an example at the Congress Exhibition of April 1936. He said: "From that hunger-stricken, impoverished land of skeletons, Orissa, have come men who have wrought miracles in bones and horns and silver. Go and see, how the soul of man even in an impoverished body can breathe life into lifeless horns and metal".

That was the basis of Gandhian theory of economics. His theory of production and distribution of wealth was based on this soul-purifying consciousness of the dignity of labour He laid stress on the inner growth of the individual and their re-instatement to "the original estate". Of course, he had changed his mind on some matters over the years. but in ultimate analysis it would be found that his basic tenet remained unchanged. For instance, in his earlier writings he showed an antipathy towards the modern capitalistic mode of production. In those days he laid exclusive emphasis on the development of cottage industries, particularly on spinning of yarn with the aid of charka. That had evidently a political reason. But later he realized the situation and changed his views. He supported the millowners of Bombay and Ahmedabad principally on the ground that the yarns spun by the mills were helpful for the handloom producers of cloth in the villages. In this respect he was prompted by the realities of the situation. He realized that the yarns spun by the people or the cloth manufactured with same were not sufficient to meet the needs of the growing population. From this point of view he came to realize that though development of cottage industries was a necessary means for absorption of the surplus labour of the villages to diminish their poverty, yet development of the machine way of production was equally necessary to meet the day to day needs of the people. He further thought that it was necessary to make available to the villagers the necessary implements and inputs for the cottage industries, He cited a pat example on this score. The example cited by him was that of the sewing machine as produced by the capital intensive manufacturing sector. He said that with the sewing machine the villagers can set up tailoring establishments to meet the garment needs of their own. Similarly he thought that capital intensive industries were necessary for the construction of railways, roads, bridges etc. In other words, though he wanted decentralization of production, he wanted it to be based on a rational basis. He thought that the big sector and the cottage industry sector should be complementary to each other. According to him this was necessery for full employment of the people. The big sector alone cannot solve the employment problem of a big country like India. So the method of production should be so decentralized as to give their rightful places to both the big and village industries. Only in that way can poverty be ameliorated. The makers of our five-year plans ignored this view of Gandhiji in the earlier years of their planning. It is only latterly that they have come to realize the truth of Gandhian teachings on economics.

---

* Calcutta.

Though he was thus not averse to capitalistic way of production, his support of it was however based upon his own theory of socialism. His socialism had special slant of its own. He believed that the cause of socialism would be best promoted if the capitalists function as trustees of the nation. What he meant by it was that whatever the capitalists would earn should be spent for amelioration of the distress of the people. In other words, trusteeship of the capitalists should be a stepping stone towards establishment of a socialistic form of society. But exercise of this self-discipline on the part of the capitalistic businessmen did never come. They became hoarders, profiters, black marketeers and tormentors of the common man. Those who utter the name of Gandhi and aspire to follow his precepts forget this important aspect of Gandhian economics to bring about an economic transformation of the country.

Though Gandhiji was thus not averse to capitalistic mode of production, his main thesis however was to cure unemployment and ameliorate poverty through the growth and development of cottage industries. According to him maximum effort should be made by the villagers to make themselves self-sufficient in regard to meeting their own needs. He did not like to see the surplus labour in the villages remain idle. He wanted to inculcate in the villages the maxim of "waste not, want not". His thesis was not a utopian one. That it was a pragmatic thesis is proved by the fact that many of the countries of the world in modern times have prospered through development of cottage industries. Even in some of the most advanced industrial countries of the world, the cottage industries successfully function as ancillaries of big industries.

A question that may pertinently be posed here is whether the Gandhian scheme of establishing cottage industries has its relevancy in the context of India's present planning. Yes, it has, if there be dispersion of suitable industries into the rural areas. Three distinct principles should guide us in the matter of selecting industries suitable for dispersion into the rural areas. These three principles are as follows: (i) industries selected should fit in and balance with the existing economic structure of the area ; (ii) industries selected should be such as to be of advantage to the national policy for solving unemployment, urban congestion, pollution and other social problems ; and (iii) industries selected should not operate under costs that are high compared to the costs of their competitors or compared to the demand prices of their customers. I had indicated these three principles as early as 1949 in my work *'Challenge of Rural Poverty'* (page 73). I had observed on the occasion: "The selection should be viewed from the point of view of practical feasibility and not social desirability." Amongst industries suitable for dispersion into the rural areas I had provisionally named on the occasion, in the food group grain milling, and oilseeds crushing, vanaspati manufacturing, preserved foods and fruits, fruit syrups, jam and gellies, vinegar and wine making, bacon curing and sausages (as an export industry), sugar, sugar confectionary and glucose, butter, cheese, condensed milk and margarin, cattle, dog and poultry foods, biscuit and so forth; in the metal group agricultural machinery, carriage, cart, primary batteries and accumulators, lighting accessories and fittings and heating and cooking apparatus, cutleries and so forth; and other industries like handlooms, shoe and sandals making, brick and fireclay making, brush making, furniture and upholstery, canvas goods and jute products. fancy articles, leather (tanning and dressing), manures, disinfectant, glue etc., rope, twine and net making, saddlery harness and leather goods, timber (saw milling etc.), games and toys, sports requisites, paint, colour and varnish etc. In the selection of such industries for rural dispersion, the seasonal employment of the local agriculturists is to be taken into account. In areas predominantly devoted to the cultivation of rabi crops, industries having peak of activity in winter are to be taken as unfavourable indication for dispersion, while in predominant areas of kharif crops a peak of activity in summer is to be taken as a discouraging factor. A peak of activity in both cases in spring and autumn is to be counted as neutral. All this I had written in 1949, and on happening to read it in 1972 the well-known Swedish economist Dr. Gunnar Myrdal wrote to me a congratulatory latter saying "you were remarkably ahead of your time". But unfortunately our planners felt shame to take any one from the same.

Gandhian Model of Rural Development: A Retrospect and Prospect

G. P. Mishra*

How to develop rural areas for removing poverty and inequality has been always a centre of talk and discussion at the policy making level of planning for development. But the irony of the fact is that the developmental process of change operating in rural India since the inception of its planning has neither reduced poverty nor inequality but on the contrary, it has promoted them with growth in production and income. The question which arises is this: Why has it happened so despite launching a number of developmental programmes and policy measures ?

A scientific answer to this question lies in a critical review of the history of policy formulations for rural development and their working in the past. Having the limitations of this paper, a gist of such a historical review may be suggestive to indicate that the strategies formulated for rural development in the past were primarily growth in production biased without comprehending the social structure of clase configurations and their relations in production and distribution; and so the consequential process of development could not check the phenomena of proverty and inequality from growing with growth in the rural areas. It is thus becoming increasingly clear that any effective solution of these problems requires a fresh thinking of and search for development policy for understanding the institutional character of them which happen to co-exist and grow with the process of growth in production and income.

Very recently, with the installation of the Janata Party in power at the centre and in Nothern States the talk of the Gandhian Approach of rural development is very much in the air and the experiment of a new policy formulation is expected to take place. It is, therefore, pertinent to retrospect the Gandhian approach of development for looking forward to the prospects of its use in the context of the present agrarian situation of India.

---

* Fellow in Rural Economics Unit, Institute for Social & Economic Change, Bangalore.

Characteristics of the Model

The Gandhian model of development is not a positive aggregative analysis of the process of growth and change but a philosophic complex of some diverse and multi-dimensional ideas and thoughts relating to the issues confronting rural India of his time which are contained in his scriptures. Howeve, a synthetic editing of such ideas presents an approach of development if they are pieced up together at one place. In fact, that approach of development appears to be more a philosophic than an analytical framework of development.

The Gandhian framework of development which is basically philosophic, is tacitly but heavily drawn upon the concepts of 'Metaphysical Idealism' and 'Ethical Absolutism' the latter as the derivative of the former. The concept of 'Metaphysical Idealism' which characterises Gandhism, implies Gandhi's faith in the omnipresent and differentiated existence theory of God. That is why Gandhi has treated all human beings as the embodiment of God. This philosophy of Gandhi spiritualises the existence of human beings in the society and this process of philosophisation of spiritualism negates the existence of conflicts between the individual and social interests.[1] This is actually based on the practice of self-realisation about the omnipresent fundamental spiritual reality as 'an all-embracing Living Light' which always reflects the very existence of God. As a consequence the concept of 'Universalism' is co-existent with that of 'Individualism'.

The concept of 'Metaphysical Idealism' being a part of his faith as well as his practice of life, he has believed in the supremacy of ethical values and Sarvodaya (the good of all). The idea of Sarvodaya having based on the concept of the unity of existence lays an exclusive stress on love and well-being for all and pleads for perpetual fight against cruality to human beings and animals. Hence this ideology inculcates the values of eternal truth and justice leading to the supremacy of ethical absolutism which is embeded in has all ideas and thoughts relating to development and change.

Ideals of Development

Given the complex of above ideas, the Gandhian approach of development is based on the goal of 'Sarvepi Sukhinah Santu'. This ideal of the Gandhian approach of development is akin to that of Ruskin's 'Unto the Last' and Bentham's utilitarianism which stands for the attainment of 'the greatest happiness of the greatest number'. The attainment of this goal depends on that politico-economic order of the society which could lead to the establishment of 'Ramrajya'. His concept of 'Ramrajya' implies the existence of 'in-cum-through' relations of the individual to the society via the ruler. According to Gandhi, it is possible through the 'Village Swaraj'.[2] 'Satyagrah' (Truth) and 'Ahimsa' (Non-violence) are two means to achieve the goal, if the politico-economic order of the society deviates from its path to attain the goal.

All this implies that the goal of Sarvodaya can be realised by attaining 'Ramrajya' through the village Swaraj. In other words, the Gandhian approach of development is rooted in the villages and pursues to achive its ideals in the socio-cultural heritage of ancient India.

Concept of Development

Broadly speaking, the Gandhian concept of economic development is a combination of 'economic' and 'real' progress. By economic progress Gandhi means 'material advancement' with limits which consists in the growth of material things needed to satisfy human wants. His concept of 'real progress' is referred to moral progress which again is 'the same thing as progress of the permanent element in us'.[3] To Gandhi, material progress must accompany real progress otherwise the economic development of society will break and stagnate leading to its decay. His contention is that 'grinding pauperism can lead to anything else than moral degradation'.[4] Poverty is the root cause of all evils and immoral works. So the objective of material progress should be to curb out the deep-rooted poverty of the society so that there may not be moral degradation. This implies that the Gandhian concept of economic development is a sustained process of growth in material objects and improvement of moral values. Gandhi has cited the historical examples of Rome, Britain, the Dwaper India, Egypt etc which faced their downfall due to a fast deterioration in moral values with high material affluence.[5]

Main Aspects and Sources of Development

Production and distribution are the main aspects of economic development. In the Gandhian scheme of development, material progress is a function of production of essential commodities like food and cloth which satisfies human wants ; and real progress depends on distribution which should be equitable. This implies that the process of development should be distributive in effects for improving the level of moral value. What the operational process of production and distribution should be for raising up economic and moral progress in the interest of 'the good of all' is a most significant question of policy-making relating to a poor country like India.

According to Gandhi, distribution can be equalised only when production is equalised ; in other words, when distribution is simultaneous with production.[6] In order to attain such a process of distribution, Gandhi has suggested to follow the doctrines of 'swadeshi' and decentralisation policy as the main guidelines of production. His concept of 'swadeshi' is not only a manifestation of an economic idea but also an expression of religious and ethical code of conduct for guiding the operations of economic, social, political, religious and cultural life of mankind as a whole. As an economic doctrine it entails that the process of production should be distributive in operation and this depends on the swadeshi (i.e. endogenous) system or pattern of production process.[7] As an ethical concept it highlights what one's duty (swadharma) and one's obligation to others (paradharma) ought to be. The ideal of Gandhian swadeshi refers to the economic duty of the individual and the obligation to his neighbour so far as the production of necessaries and their uses are concerned. The economic duty of the individual in the Gandhian sense appears to be two-fold : firstly, to produce goods by himself in order to satisfy his wants ; and secondly, if he fails to do so, he should use the goods produced by his neighbour. The first one refers to 'swadharma' and the latter to his 'paradharma'. All this shows how the process of production could be made self-propelling and self-sustaining leading to material progress as well as moral progress in the society.

His concept of 'swadeshi' is the main calculus of development while his idea of decentralisation is its derivative. According to the latter, 'production should be localised' (i.e. regionalised). Therefore, the Gandhian approach of economic development lays stress on the growth and expansion of 'endogenous' industries with agro-base.[8] The decentralised pattern of agro-based industrial production is very akin to the doctrine of balanced regional economic development in modern terminology which suggests to adopt the technique of 'planning from below'. The rationale behind his concept of 'planning from below'. is the achievement of village economic self-sufficiency in a democratic order, i.e. 'village swaraj'.

The Gandhian philosophy of balanced regional economic development does not favour the operation of a large scale industrial production but favours the expansion of small scale agro-industries. The Gandhian approach of economic development favours the expansion of village-oriented industries not only for the decentralisation of wealth and economic power but also for providing employment opportunities to million Indians who are poor and without work and employment.[9] He has opposed industrialisation in the modern sense of the term because it leads to concentration of wealth and economic power, leaving a large part of labour force unemployed because of of the use of machinery apart. Howevor, he believes that 'some key industries are necessary, but they should be owned by the state. He partially supports the case of industrialisation because of the modern civilisation which is growing with the pace of scientific and technological advance taking place in the modern society. He largely opposes the case of industrialisation owing io growing craze[10] for modern machinery and technology in the process of industrial development which is creating a large pool of unemployed labour force leading to proletarisation and pauperisation of human race. All this leads to moral degradation of moral and human values. That is why he wants the swadeshi pattern of production process accompanied by a decentralised of growth in material production, as a result of which the whole process of growth will be distributional in effects and there will be no threat to moral progress.

How an effective equitable distribution system could be made operational, the Gandhian approach of development has also suggested two things more : (a) foreign markets should not be tapped in order to dispose of domestic goods ;[11] and (b) the rich should act as trustees so that their superfluous wealth may be used for the benefit of the society as a whole.[12] According to Gandhi, if the rich fails to behave as trustees of their wealth for social ends the methods of non-violene, non-cooperation and civil disobedience should be used as infallible remedial measures. The Gandhian idea of trusteeship is advanced to take out the sting of capitalism in order to yoke the same to the service of the society as a whole.

The above analysis shows that the Gandhian concept of 'swadeshi' is an institutional source to generate an element of simultaneity in the process of production with distribution, and his doctrines of decentralisation and trusteeship are the strategic policy guidelines for sustaining that element in the process of development in general.

What Does all this Mean ?

The concept of 'Metaphysical Idealism' (and consequently ethical absolutism) is the most abiding force in the Gandhian model of development. This force is penetrated into all his ideas concerning development. That is why Gandhi wants to create that type of socio-politico-economic system which may have a set of rules, an ideology to sustain them, and conscience in the individual for making him strive to carry them out.[18]

As a system he wants 'village swaraj' ; as a set of rules he wants to uphold the concept of individualism in democracy ; as an ideology he preaches to have faith in the omnipresent existence theory of God who is differentiated absolute (i.e. metaphysical idealism) ; and for conscience as the main source of self-realisation, he advocates for the adoption of 'Truth' and 'Non-violence' as the means to achieve the ultimate goal of life. With all this, that system will lead to the attainment of 'Ramrajya' and consequently, 'sarvodaya' as the ultimate goal of life will be translated into reality.

Given the above, the Gandhian model of development is basically an ideological alternative to formulate a strategy of rural development in the context of the socio-cultural heritages of village India. The purpose of this strategy is to present comprehensive politico-economic programmes for providing social justice and equity to the million poor Indians who largely live in villages. The main objective of this development strategy is to attain 'village swaraj' which is possible by democratising the structure of policy-making body, having Gram Punchayet as the apex of that power structure. Given that characteristic of power structure, Gandhi does not favour 'state capitalism' but ruralisation of democracy with decentralisation of production as well as wealth.

The Gandhian approach of development lays stress on the endogenous process and techniques of farm production for supplying necessaries to satisfy wants. It emphasises to develop village and small scale agro-based industries for supplying output according to the needs of the people living in villages and absorbing unemployed rural labour force in them for subsistence earnings. The development of such industries require endogenous technology which is labour-oriented. The model uses trusteeship as a voluntary measure to remove inequallty if it grows in course of time with growth.

All this shows that the remedies of poverty and unemployment lie in (a) creating a self-propelling and self-sustaining process of production in the villages ; (b) decentralisation of production system, wealth and economic power ; and (c) formation of trusteeship for social ends. These remedies will be actualised if the soico-politico-economic system of the country embraces the idea of God as an omnipresent fundamental spiritual reality, 'an all embracing Living Light' and creates a situation of spontaneity among all living beings that 'we have duty to produce' and 'obligation to supply necessaries to neighbour if he is in need'.

Historical Realities

Gandhi was basically a saint philosopher and moral revolutionary. Hence his philosophic framework of development is finally based on the conviction or idea that 'faith should transcend reason' but not otherwise. That is why the Gandhian approach combines idealism with materialism while discussing the question of poverty and inequality. In the historical perspective of growth and change, the application of this model to an open economy of the modern time seems to be shaky and unfounded in actual life. The Gandhian framework of development is ideal if faith in God as the omnipresent fundamental spiritual reality is realised and translated into action by individuals. But this has been generally mythical and hypothetical in the realm of historical reality of social evolution. Moreover, the upholding of that faith in the existence of God has been mostly a source or weapon of exploitation and oppression in a society where the process of individuation becomes institutionalised.[14] The history of modern democratic world co-existent with capitalism bears a witness to this fact.

"Humanity has arrived at a historical stage where the nature and dynamic of a single world process of production dominates all the spheres of the social and insdividual life across industrially advanced areas and the Third World. This process has been transforming the structure and position of traditional institutions and developing modern ones in a way such that the field of meanings and operations of individual and social groups tend to become functional to the production of the same process".[15] The historical process of production in the modern world reflects the interaction between a tendency to 'interdependence' and a tendency towards 'differentiation' as the characteristic feature of that production. In this case, the Gandhian formula of development may be a note of warning to the countries which are facing such an interaction and consequently conflicts but cannot succeed in bringing about harmony among different social groups of individuals which are tied up to the system and process of production as interdependent and differentiated units.

The success of the Gandhian politico-economic programmes for providing social justice depends on the ruralisation of democracy at the grass-root; self-administered villages. But the present system of parliamentary democracy having centralisation of power at the top of the Indian policy cannot make it possible in real life.

Changing Agrarian Structure

How and where to fit in the Gandhian framework of rural development is a big question posed to the planners and policy makers today. The applicability of this model depends on the present agrarian structure that rural India has.

The agrarian structure of rural India is multi-structural in composition. Historically this structure has been constantly changing. 'Study of India's economic develoment in the 17th and 18th centuries shows that serious changes took place in the multi-structural economy of the country, changes evoked both by internal economic processes and by the European power's intensive trade (and then also colonial) expansion that had began during that period".[16] The economic history of the rural India of that period shows the gradual appearance of 'the rudiments of new relations—capitalist relations' owing to the operation of both, internal as well as external forces. Since then the process of transformation has been undergoing within the feudal economy of India. The rate at which capitalism is occurring varies widely in different regions on account of many historical reasons.[17]

The post-independent scene of the agrarian economy also bears a witness to this fact. With the growth of commercialisation, specially after the spurt of new farm technology, the Indian peasantry ceases to be a homogenous group, cultural similarities notwithstanding, and is differentiated into 'broadly definable classes.'[18] The characteristic features of production-cum-land, labour, input, credit and commodity market relations show how different classes exist in rural India and also indicate how the case of 'interdependence' through these relations exists therein leading to conflicts between them. The expansion of these markets—land, labour, input, credit, and commodity—also reflects how 'the definable classes' having intimately tied up to labour and commodity markets in particular are gradually getting drawn into the vortex of capitalism.

Empirical evidences show that the capitalist process of development is largely taking place in the large farm sector of the Indian rural economy ; a part of the economy comprising of poor tenants and peasants is still the traditional subsistence. A dualistic process and system of farm production i.e. capitalist and peasant, exist because the farmers of the large farm sector having command over the supply of scarce agricultural resources, credit-worthiness, and technical dynamism are in a position to take benefits from different types of investment and development programmes ; while those poor tenants and peasants are not able to do so. The post-1965 era shows how the former were benefited from the process of new farm technology and how the latter were unable to be benefited from that process. However, the poor tenants and small and marginal peasants are tied up to the capitalist process of development in agriculture because they have to hire out labour for earning wages in order to meet their subsistence requirements. The large farmers have been also benefited so because the present democratic structure of political power is presented by the people of this class of rural population who have always conscious of their 'vested interests'. As a result of all this, rural poverty and inequality have grown more with the process of growth occurring in rural India. Given that agrarian structure and democratic power composition, the application of the Gandhian model of rural development will not solve the problems of poverty and inequality and unemployment but on the contrary, it will provide power and opportunities to the dominant class of the rural population to use the present system of democracy in protecting their vested interests by deriving benefits of different kinds from the implementation process of developmental programmes in the rural economy.

Points to be Considered

Given the structure of Indian policy, the following aspects of the Gandhian approach of rural development may be, however, considered : (a) decentralisation of agro-based industries ; (b) emphasis on village and cottage industries ; and (c) institution of trusteeship. The framework of decentralisation policy should not be only local or regional in diffusion but also be anti-monopolistic in character. The only apprehension of this policy, if brought into action in the present set-up of India's politico-economic organisation, is the entry of big industrial magnates in disguised form or medium and small entrepreneurs whose competition may build a new base for the growth of capitalism in due course of time. Hence a care for designing framework of this policy should be taken; otherwise agrarian capitalism which is taking place at the farm level, would get drawn into the vortex of industrial capitalism. A competition between agrarian and agro-industrial capitalism would be more fatal in the present context of development that rural India is experiencing.

Emphasis on village and cottage industries is based on the hypothesis of employment creation in rural areas. The employment content of these industries cannot be disputed. The Gandhian concept of village and cottage industries is based on the objective of making villages self-sufficient. This implies that 'small scale of peasant production' should have market for those goods produced by such industries. Hence the employment-oriented village and cottage industries should use endogenous technology and must have domestic demand. Again the operation of such industries requires a separate group of the population. The requirements of these industries indicate that their success, from the point of view of serving the very purpose of employment and welfare, depends on the linkages created between small peasants and producers of the goods produced by these industries and the control and management of the same.

The Gandhian concept of trusteeship is a very good measure to reduce inequality and so poverty. But his concept can be realised by adopting non-cooperation and civil disobedience movements. Such movements depend on political parties which have faith in democracy and aim at bringing about socialism in the country. But the Indian experiences about the operation of political parties which have faith in democratic socialism, do not bear witness of any type that they started the Gandhian movements of non-cooperation and civil disobedience having based on non-violence for persuading the government to install trusteeship of excess wealth possessed by individuals nor for compelling them to surrender that part of their wealth for the welfare of the society. The reasons are obvious. Most of the parties (i.e. political) have faith in democracy as a system and means to attain socialism but within a capitalistic framework of the society which makes them enjoy political power; whatever the proportion of their share in that power may be.

Conclusion

As it appears from the above discussion, it is clear that the application of the Gandhian model of development to rural India cannot work successfully for providing social justice without the existence of the Gandhian type of rural economy. The present agarian situations prevailing in the economy indicate that the Gandhian type of rural economy cannot be installed at the present juncture of historical development which India is experiencing and the historical process of development and change taking place in the modern world in influencing it in that direction. Given the present state of socio-politico-economic affairs, the application of this model will benefit the dominant class of the rural population at the cost of the rural poor. Why and how this will happen, the above analysis makes it clear.

The main crystals of the Gandhian model such as the expansion of village and cottage industries, decentralisation of production and wealth, and the institution of trusteeship through the confiscation of excess superflous wealth of the rich by the state if they do not surrender it voluntarily may be put into action in the present state of affairs. The total use of the Gandhian model requires politicising of the masses, so that the attitude of the ruling elite to social justice and equity may not be their 'paternalistic' and 'armchair' concern for the poor.[19]

Notes and References

1. This implies that the realisation of 'spiritual reality' as the existence of unity in the man which is the same in all men, will breed up an element of social interest and so that interest will not conflict with the social interest. This idea distinguishes the concept of individual interest from the western concept of self-interest which always comes in conflict with the social one.
2. "My idea of village swaraj is that it is a complete republic, independent of its neighbour for its vital wants, and yet interdependent for many others in which dependence is necessity. Thus village's first concern will be to grow its own food crops and cotton for its cloth. It should have a reserve for its cattle, recreation and playground for adults and children. Then if there is more land available, it will grow useful money crops, thus excluding ganja, tobacco, opium, and the like. The village will maintain a village theatre, and public hall. It will have its own water supply ensuring clean water supply.........Education will be compulsory up to the final basic course. As far as possible, every village activity will be conducted on a co-operative basis." (Gandhi, M. K., 'Rebuilding Our Villages', edited by Kumarappa, B. Navajivan Publishing House, Ahmedabad, p. 5).

3. Gandhi, M. K., 'Economic and Industrial Life and Relations', Compiled and edited by Kher, V. B., p. 3.
4. Ibid, p. 3.
5. Ibid, p. 4.
6. Mathur, J. S., 'Essays on Gandhian Economics', p. 30.
7. "But the Khadi mentality means decentralisation of production and distribution of the necessities of life. Therefore, the formula so far involved is, every village to produce and use all its necessaries and, in addition, to produce a certain percentage as its contribution to the requirements of the cities." (Gandhi, op. cit., p. 149)
8. Gandhi wants agro-based industries for supplementing agriculture with the supply of necessary products and inputs required for making a village self-reliant in growth for domestic consumption and labour employment.
9. "What a calamity it must be to have 300 millions unemployed, several millions becoming degraded every day for want of employment, devoid of self-respect, devoid of faith in God". (The Message of Mahatma Gandhi, edited by Rao, U. S. Mohan, p. 46-7).

   "......only if the means of production of the elementary necessaries of life remain in the control of the masses. These could should be freely available to all as God's air and water are or ought to be; they should not be made a vehicle of traffic for the exploitation of others. Their monopolization by any country, nation or group of persons would be unjust. The neglect of this simple principle is the cause of the destitution that we witness today not only in this unhappy land but in other parts of the world too." (Ibid, p. 48).
10. "What I object to, is the 'craze' for machinery, not machinery as such. The craze is for what they call labour-saving machinery. Men go on 'saving labour' till thousands are without work and thrown on the open streets to die of starvation......Today machinery merely helps a few to rise on the back of millions. The impetus behind it all is not the philanthropy to save labour, but greed. It is against this constitution of things that I am fighting with all my might." (Gandhi, quoted from the Message of Mahatma Gandhi, edited by Rao, U. S. Mohan, p. 52-3).
11. Gandhi, M. K., Harijan (August 18, 1940), p. 252.
12. "This denial of the very concept of private property stemmed from his belief that all riches, not only material but also physical and intellectual, belonged to God, and could be held by the individual, only as a trust." (Rao, VKRV, The Gandhian Alternative to Western Socialism, 1970, p. 25).
13. Mrs Joan Robinson says: "Any economic system requires a set of rules, an ideology to justify them, and a conscience in the individual which makes him strive to carry them out." (Economic

Philosophy, Penguin Books, 1964, p. 18). In view of this idea, it is mentioned that Gandhi also wants to build a system having the same.

14. The process of individuation shows how a person in a democratic society where individualism with right to freedom and liberty dominates, becomes an institution within himself and how he becomes more important than the society in course of time.

15. Bonito Carlos A., 'Cultural Action and Rural Development', Alternatives, Vol. 11, December 1976. p. 437.

16. Chicherov, A., "On the Multiplicity of Socio Economic Structures in India in the 17th to the Early 19th Century", in New Indian Studies by Soviet Scholars, No. 33/76, p. 51.

17. Utsa, Patnaik. "Capitalist Development in Agriculture", Economic & Political Weekly, September 25, 1971.

18. 'The definable classes' are as follows: (a) Landlord: possesses substantial amount of land and rents out its major portion; does not use family labour in cultivation; perpetuates relation of some form of bondage (based on usury contract, grant of house sites etc) with labourers and tenants. (b) Landlord capitalist: possesses substantial amounts of land; rents out a portion of it and cultivates the rest with hired labour which is of free and bonded types; does not use family labour in cultivation; uses modern inputs on land which is not leased out; and also sells, produces and possesses implements and draught animals. (c) Rich Peasant/Capitalist Peasant: possesses relatively less land than landlords and landlord capitalist; is directly engaged in cultivation but uses more hired labour than family labour; uses modern inputs; produces for the market; may lease in land. (d) Middle Peasant: owns land wholly or partly; owns implements and draught animals; produces mainly for domestic consumption: uses more own or family labour than hired labour; may own land less than leased in. (e) Poor Peasant: owns land wholly or partly; inadequate implements and draught animals; works on own land less than works for wages. (f) Agricultural Labourer: does not own land, implements or draught animals in any significant measure; sells labour as a commodity at a price; may be hired as semi-bonded or bonded labour. This differentiation of the Indian peasantry is based on the existence of the characteristic features of land, labour and commodity market relations in agriculture.

    For details please see, Das, A. N. "Towards a Theory of Agrarian Unrest", National Labour Institute Bulletin 4/977: and Mishra, G. P., "Process of Income Distribution in Agriculture", Indian Economic Journal, January-March 1977.

19 Sinha, R. P., 'Food and Poverty', Croom Helm Ltd., London, 1976, (Chapter 7), p. 91.

Resource Allocation in Public Eenterprises

R. K. Choudhury*

Mounting public outlay unconcerned with rationale of the sources of financing it and the productive potentiality of investment taken for granted have belied the expectation of planners that the public sector, assuming the role of a model employer, would offer fair wages and good working conditions in order to provide the motivation for high productivity and would set an example in the area of labour-management relationship. In industry and allied sectors, however, the productivity of materials and capital is of primary significance in tracing the productivity of labour. Since men work with tools and under an organisational system, productivity cannot be raised only by asking labour to work harder. Output per man-hour, the most common measuring rod of productivity is, therefore, not the result of labour alone but also, and more essentially, of the efficiency of managment and a construction complex of resource allocation Plan.

Materials Cost

It will be seen on an average that materials cost represents the dominating element in the cost structure of industrial firms. Factors like, high materials consumption, unusual accumulation of inventories, non-commercial and unprofitable line of activity, high expenses ratio demurrage, etc, have raised the operating cost of Public Sector Units to a level detrimental to the growth of productivity. Not only the interest payment on loan is high, low capacity utilisation has pushed up the overhead cost to an unmanageable extent. It was estimated that approximately Rs. 4000—Rs. 5000 crores were annually spent on purchases of materials and equipment in both public and private sectors (1967-68). The share of public sector being quite large (about 65%), even a small reduction in unproductive materials cost would release a considerable amount of locked-up capital for alternative employment.

Value analysis cannot only reduce costs, but it can also eliminate purchase of unnecessary items including elimination of imports which will mean a substantial saving. It is quite possible, through value analysis, standardisation and variety reduction, to achieve a cost reduction of 6-8%. If we, therefore, consider the average materials cost of public enterprises to be of the order of 65% of total cost as has been estimated, a six per cent reduction would mean the release of an idle stock valued at more than Rs. 200 crores for alternative productive investment having the potentiality of adding to the gross profit more than 4% annually. This would also mean an additional employment generating capacity for more than one lakh workers in large scale or about a million in the small scale sectors. An example of how value analysis could reduce cost may be cited here as the annual rate contract for fire buckets (for defence services) which areused to be galvanised and then painted over as the regular feature. The matter was examined and it was agreed that galvanising should be omitted and the import of zinc spelter be considered redundant.

---

*Jowai Government College, Meghalaya.

Inventory Accumulation and Productivity

Though the pursuit of increasing inventory investment is motivated by the realisation of cost reduction owing to bulk buying, it must not be forgotten that the acumulation would result over a time in higher carrying cost. Efficient management should, therefore, seek to achieve an equilibrium between the benefits of cost reduction through inventory investment and the sacrifice due to increasing carrying cost of inventories. Inventory investment in India's public sector enterprises seems to be far from the consideration of such an equilibrium. The mounting magnitude of idle capacity locked up in inventory with excessive indent on bank credit could be easily released for employment in an alternative channel of productivity, had there been standards of evaluation and fixation and hence the premia and penalties could have bee infused into the regulatory system of inventory investment. Data relating to capital employed in inventories of a number of indentical enterprises in the public and private sectors as given below will enable us to make a comparative study.

TABLE : I

Inventory in Terms of Number of Months of Cost of Production in Public Sector and Private Sector Manufacturing Enterprises

	Public Sector			Private Sector		
	1965-66	1966-67	1967-68	1965-66	1966-67	1967-68
1. Number of companies	73	73	37	1333	1333	1333
2. Inventory	39,884	53,677	67,312	99501	108861	122879
3. Cost of production	67,049	88,666	108,472	N. A.	N. A.	N. A.
4. Average monthly cost of production	5,587	7,389	9,040	N. A.	N. A.	N. A.
5. Inventory in terms of number of months of cost of production	7	7	7·5	3	3	3
6. Ratio of inventory to total capital employed (%)	17·6(68)	17·2(73)	20·2(73)	N. A.	N. A.	N. A.
7. Ratio of inventory to value of production (%)	41·0	44·5	46·2	28	27	28
8. Ratio of inventory to sales (%)	42·9	46·6	49·1	28	28	29
9. Ratio of value of production to capital employed (%)	42·9	38·7	43·7	103	105	106
10. Ratio of sales to total capital employed (%)	40·9	37·0	41·1	104	104	104
11. Ratio of Sales to value of products (%)	95·5	95·5	94·0	100	98	98

Source : (a) For the Public Sector : Finances of Public Sector Companies—Reserve Bank of India Bulletins, (b) For Private Sector figures : Finances of Indian Joint Stock Companies as published in December, 1967 Issue of Reserve Bank of India Bulletin.

*Amounts are in lakhs of rupees.

The above table presents a revealing picture of the extent of infructuous capital blocked in inventory accumulation in public enterprises as against the optimum level of investment in private sector. Measured in relation to value of production, inventory investment on an average constituted 44% in the public enterprises during 1966-68, whereas it accounted for only 28% in the private sector in the corresponding period. A high ratio of this magnitude indicates that inventories accumulated in the former maintained no costing relation to the volume of anticipated production. Similarly, the proportion of sales claimed by inventories in the public enterprises touched the mark of 49% in 1967-68 as against 29% in private sector This is clearly due to inefficient market study as to the anticipated sales turnover.

Such ill-considered inventory investment has resulted in the locking up of a huge amount of capital, and not only there is no return on the capital so tied up, it has often exposed such blocked capital to the fluctuations in prices. The carrying cost of inventories being much more than the interest payable on money borrowed from banks for obtaining them. It is of added significance that the piling up of inventories be drastically cut to the optimum point of necessity. Unlike in the developed countries like the U.S.A, very few enterprises in India take into account the cost of capital and its opportunity cost while calculating carrying cost of inventories. As a result, cost of production in our public enterprises has been mounting and their competitive capacity diminished, affecting thereby, the profitability which explains the held-back position of the public sector far from the objective end results.

The extent of loss due to this kind of inefficient materials management can be guaged from the revealing figures of the above table. While in the public sector manufacturing enterprises, inventories were held equivalent to more than seven months of cost of production, in the private sector they were only of three months of value. Therefore, without affecting at all the cost structure designed to achieve the liberal objectives of these public sector enterprises, their inventory holding could have been safely reduced as much as by half, bringing them thereby at par with the private sector enterprises. This could release a minimum amount of Rs. 200 crores of locked up capital which is no less an amount than to serve the investment requirement of a project of the size of Heavy Engineering Corporation, the second in order of the top ten Public Enterprises in 1967 when the amount invested in the enterprise was of the order of Rs. 211 crores, and that, too, with inflated capital-inventory ratio.

Misuse of Man-power and Loss of Productivity

The foreign collaborators of Indian public enterprises have always maintained that the productivity of Indian workers is much lower than that of their counterparts in foreign countries. This notion has resulted in the inflated estimates with respect to labour requirment every year and was tagged to the project reports without attending to the considerations of manpower planning. Moreover, in most of the cases, the project lagged far behind the progress in the time it was originally envisaged. Therefore, the implementation of desire of the collaborators without regard to the realistic needs has overstaffed the projects with all the attendant evils of indiscipline, increased cost of production and reduced share of productivity for the average workman.

It is fairly well known that most public sector enterpeises are over-staffed and over-manned. Certain information was obtaind by the Bureau of Public Enterprises and in September, 1967 the enterprises were carrying surplus labour to the tune of 15000—this was on the basis of rather liberal standards. With more rigid manning standard, perhaps, this number would have been much larger. The Administrative Reforms Commission has observed that there is enough scope for reducing the staff in many undertakings. Various reasons have been given by the Study Group appointed by the Commission for the general pattern of over-staffing in public enterprises. Some of the main reasons are : (i) employment of large number of unskilled labourers as departmental workers during the construction stage, (ii) absorption of majority of them at a later stage in the enterprises as a result of pressures, (iii) not following any scientific system for man-power planning and (iv) adopting Government standards for clerical and office work.

It is surprising that the National Building Construction Corporation had 31 categories of staff. Staff strength of Natural Gas Commision increased from 4626 in 1960-61 to 13,620 in 1963-64.

Hindustan Steel, Rourkela provided for 6800 in the project estimate whereas the number increased from 16,261 in 1960-61 to 24,000 in 1964. Life Insurance Corporation of India is not only over-staffed but has disproportionate number of Class I officers. During 1957-64 they accounted for 165% rise in their number which has reached to 306% in

1976. The salary bills of Life Insurance Corporation of India accounted for a rise of 140% during 1957-64 and touched the mark of increase at 1154% during the period 1957-76.[2] Taking Rs. 500 per month per worker as the average labour cost (as is found to be the case with most undertakings), it would be seen that around Rs. 9 crores could have been saved had there not been the unproductive labour of about 15,000 units as investigated by the Bureau of Public Enterprises for the year 1966. If properly invested in alternative employment in accordance with the norm of efficiently managed Corporate Companies, this amount could have resulted in an additional gross profit of Rs. 20 crores per year.

Other Leakage to Productivity

In most of the public sector undertakings, output is low in relation to installed capacity. In most of them, utilisation remained below 50% and there are still units which have utilised only 10-20% of the capacity. Plants frequently witness break-downs. There is undue delay in replacements. Sometimes machinery purchased is defective. In many cases, after incurring crores of rupees, Projects have been abandoned. In most of the cases estimates are framed without reference to the feasibility study and, therefore, have to be raised frequently upwards. Overtime payments have appeared to be a regular feature and, until recently, they were a necessary item in the cost structure of almost all the Public Sector Uundertakings. In Hindustan Steel, for example, payment on this account rose from Rs.6·19 lakhs in 1963-64 to Rs.30·13 lakhs in 1964-65 in the Bhilai Unit and from Rs. 5·86 lakhs in 1961-62 to Rs. 25 lakhs in 1962-63 in Rourkela Unit and the threat did continue in the following years. It has been estimated that overtime payment in many Public Sector Projects have claimed 4-7% of the annual wage bill. If we however consider the rate at 3% on an average for all the public enterprises, the magnitude of redundant expenditure on account of overtime payment during the 15-year period from 1960-61 to 1974-75 comes to a surprising extent of around Rs. 164 crores.

One cannot but feel bewildered to see how a large number of helpers

---

1. Extracts from Office Memorandum No. 2 (178)/1968, Bureau of Public Enterprises (G. M.), New Delhi, the 14th April, 1969.
2. 19th report for the year ended, 31st March, 1976, of the Life Insurance Corporation of India.

add to the wage bill without adding to productivity in public enterprises. This is what features along with the expenditure on overstaff and overtime. Whereas crores of rupees are the annual demurrage payments to the Railways and Ports, delays are a perpetual feature in the working of those units. While productive efficiency is directly functional to men, methods and time, very little attention seems to have been spared in the consideration of time-span to achieve results. Similarly, the realisation of dues from clients has also been subjected to red-tapism. When large amounts of claim are due from parties, the company has to borrow at high rates of interest. Detailed designs and drawings of layouts, buildings, etc., are revised several times and such unsual delays often give chance to the contractors to explain late completion of work. Bills are often paid to them long after the due time. The contractors, thereupon, quote exhorbitant rates to cover the cost of delay. Machinery defects are rectified after a long time. Delays occur in recognition of labour unions. Disciplinary action is considerably delayed and in some cases, the decision to initiate action against the official is taken when he is no longer in the company.

Apart from this, wastage of resources due to careless planning of public enterprises has been enormous. Defective materials storage has given rise to huge amount of loss and shortages. Due to inadequate storage facilities, for example, materials and scraps got mixed up and resulted in huge losses in Hindustan Steel. In National Coal Development Corporation, 500 out of 1019 quarters were not used for several months. Oil and Natural Gas Commission hired fire fighters at a total rental of of Rs. 3·13 lakhs which worked out to be higher than the cost of owning them. Hindustan Steel, Bhilai, had high rate of rejection of rails which alone resulted in a loss of Rs. 39·42 lakhs in 1964-65. During the period up to 1966-67, due to striks and lockouts, 33,542 man-days were lost only in Heavy Engineering Corporation, and on that account Heavy Electricals, India, Bhopal lost Rs. 4 crores. In the former, machinery and Labour remained idle to the extent of 12% and 54% respectively.

Capital costs of companies had gone up tremendously because of heavy expenditure on townships. During the first two decades (up to 1966-67), the ratio of investment in township to total cost varies from 6% to 17%. The following table presents a picture of the magnitude of investment in township in that period.

Table II

Investment in Townsips in Public Enterprises (In crores of Rupees)

Enterprises	Project Cost	Township Cost	Percentage Cost
(1) Hindustan Steel	1094	74	6'76
(2) Heavy Engineering Corporation	213	17	7'92
(3) Neyveli Lignite Corporation	165	15	9'30
(4) National Coal Development Corporation.	52	9	17'31
(5) Hindustan Aeronautic	103	7	6'80
(6) Indian Oil Corporation	94	7	7'45
(7) Bharat Heavy Elcctricals	142	16	11'27
(8) Fertiliser Corporation	176	17	9'66
(9) Heavy Electricals	75	10	13'72
Total	2114	172	8'1

Source : T. Ramaswami : "Public Enterprises in India", Page-30, 1972.

Value analysis which is one of the major tools of cost reduction would have reduced the township cost to a great extent. It is concerend with the intrinsic value of an item of worth for the functions for which it is intended and not with price and cost alone. It has already shown good results in India. In one of the issues of 'Lok Udyog', Mr. T. R. Gupta points out an instance where application of the principles of value analysis reduced the cost of an administrative building from Rs. 45 lakhs to Rs. 32 lakhs by questioning the height of the ceiling as provided which was 14 feet and reducing it to 11 feet which was correct from a functional point of view.[3] This works out at a reduction of about 30% in the cost structure. In view of poor taxable capacity of the nation and particularly in the initial stage of India's independence, a humble beginning in the townships could have been initiated and the total cost could be reduced by at least 30% releasing from the township expenditure an amount to the extent of Rs. 51'60 crores for alternative productive employment in two decades of the post-independence era.

Missing Worth of Resources : An Enumeration

In this section, we shall make an attempt to study the magnitude of missing worth of the resources employed in Public Enterprises of India in the fifteen-year period from 1960-61 to 1974-75 to make an evaluation as to the extent to which the workers have been deprived of their share of productivity and the amount of influence it has exercised on industrial unrest, deficient allocation of resources and growth rate of productivity, real earnings and incentives to labour. However, as the public enterprises, by their very nature, suffered enormously in the initial years of their emergence, we propose to consider their deficiencies, whatsoever, as natural and shall omit them from our enumeration for the period up to 1960. We shall, further, avoid the minor deficiencies, however enormous they may be in totality, due to the lack of availability of data on the one hand, and paucity of space for further elaboration thereof on the other. Hence the table made out below will present a very liberal enumeration of the missing worth in regard to the major items only. In the fifteen-year period of our study, there have been different levels of expenses on production. For the purpose of our estimate, we have chosen the figures of the mid-year, 1967-68 to be the average annual figures for the entire period.

---

[3] Dr. Raj K. Nigan ; " Management of Public Sector in India", Page : 159.

Extent of Missing Worth of Resources During 1961-75

Items of Mis-allocated Resource	Mode of Estimate	Loss per year	Total loss during 1961-75
(1) Inventories	(i) Inventories per year = Rs. 673 crores. (ii) Average carrying cost is taken for 12%per year, (iii) Inventory equivalent to 3 months cost of production is taken for justified	By way of carrying cost equal to Rs. 81 crores	(i) Carrying cost = Rs. 1215 crores (ii) Inventories = Rs. 673 crores (iii) Total = Rs. 1888 crores
(2) Overstaffing (Unproductive Labour)	(i) Surplus Labour = 15000 per year, (ii) Average expenditure on labour per unit per year = Rs. 5000	(i) Expenditure on employees = Rs. 7·5 crores, (ii) Loss of interest due to (i) = 8% : Rs. 0·60 crores Total = Rs. 8·1.	Rs. 121 crores

(3) Overtime Payments		Studied for the whole period	Rs. 160 crores
(4) Avoidable under-utilisation of capacity, red-tapism, inadequate storage, infructuous expenditure, etc.	(i) 10 p. c. of net domestic product (ii) N. D. P. per year = Rs. 1376 crores	(i) N. D. P. Rs. 137·60 crores (ii) Interest thereon at 8 p. c. = Rs. 11 crores Total = Rs. 148 crores	Rs. 776 crores
(5) Man-days Lost	(i) 50 p.c. of overall man-day lost in industries = 8·5 million (ii) Expenses on labour during unrest against no output	(i) Aggregate annual expenses on 23290 employees at Rs. 5000 each per annum Rs. 1164 crores. (ii) Loss of value added in terms of income from labour at Rs. 21000 per year = Rs. 48·90 crores (iii) Total = Rs. 60·54 crores	Rs. 907 crores.
(6) Avoidable Township Expenditure	30 p. c. of reduction on township cost (1967-68)		Rs. 52 crores
		Total Loss = Rs. 327 crores	Rs. 4904 crores

Thus the magnitude of loss due to inefficient allocation of resources in public enterprises during the period of our study, according to the evaluation we have attempted at, comes to more than Rs. 4000 crores, an amount to which no thinker can afford to remain unconcerned. Such a lamantation of the economists is nothing new, however illusory the picture of the working of public sector management may be. Thus being

---

Sources of the Table :

1. S. R. K. Rao : "Inventory Investment in Public Sector Undertakings in India. Page 180.
2. Bureau of Public Enterprises : Office Memorandum, dated 14th April, 1966.
3. Lok Udyog, 1975. Page 69. (Worked out from the data).
4. Political and Economic Weekly, Volume X No. 39, September, 27, 1975, Page 1546.
5. Indian Labour Statistics Bureau, Government of India, (1970).

the aggregate amount of loss, it has accounted for more than the total amount invested in public sector enterprises in both the Third and the Fourth Five Year Plan. The loss to the public exchequer and the national income can be gauged from the extent of blockade of capital worth 327 crores per year behind the misallocated resources. Taking the average annual labour force totalling 6 lakhs in employment of public sector enterprises, the infructuous investment per unit of labour per year comes to Rs. 5483, an amount which accounts for more than its annual wage bill. Considering capital investment per employee in large scale and small scale sectors of the industry at Rs. 17,753 and Rs. 2,018 respectively, as estimated by the Annual Survey of Industries, the control of such leakage in the way we have elaborated above could have created an employment generating capacity of 1·85 lakh units of labour in large scale or as much as 16 lakh units in the small scale sector.

Conclusion

The working of public enterprises and its influence on productivity, wages and incentives to labour thus present a gloomy picture of the industrial landscape of our country. As against the original considerations of continous increase in production, most productive use of human and physical resources and the State attaining the position of a model employer, the public enterprises today face considerable idle capacity, wastage of human and material resources, strikes and lockouts and delays, poor production and productivity, low wages and high wage differentials Poor or even obsolete arrangements for training and education of workers and staff, flight of personnel due to non-availability of opportunity to make progress and poor living standard of workers as against the prevalence of huge inventory accumulation, large labour surplus and massive unproductive investment have been the major contradictions in the working of public sector enterprises.

It is surprising to note that whereas the real earnings of labour could not be raised due to the high cost and low level of production, the management wasted annually an amount of the order of Rs. 71 crores to meet only the carrying cost of surplus inventory accumulation. While an estimated addition of only Rs. 30 crores to the annual wage bill could make available to the employees an incentive bonus of 20 p. c., the unsatiated fractional claim did engineer a large number of strikes and lockouts claiming the public sector to bear the burnt of financing an average of Rs. 60 crores worth of man-days lost per year.

Agricultural Production in India

S. S. Grewal and Balwinder Singh*

We are presenting here some simple facts about agricultural production in India with a special focus on production of foodgrains. These facts, though simple, are nevertheless quite important. If we have a look at our foodgrain production through time during the last one decade we see that we achieved the maximum production of 116 million tonnes during the year 1975-76. This is the record production achieved so far. During the following year, i. e. 1976-77 also the Kharif production has been quite good and if all goes well in the Rabi season we may end up with another year of high foodgrain production. The picture at the moment seems quite optimistic and we have been able to garner a buffer stock of about 17 million tonnes. Against this background of comfortable position of food stocks, the economic surveys and the government reports issued from time to time indicate that the economy is poised for a quick growth.

However, we need to make objective assessment of the situation and have to have a deep look at foodgrain production in the country. If we examine the behaviour of foodgrain production from 1967-68 onwards we notice that foodgrain production varied between 95 to 99 million tonnes during the first three years starting from 1967-68. Then we had a year of good production in 1970-71 with a production standing at about 108 million tonnes, The next year i.e. 1971-72 was also a good year but in the later years i.e. 1972-1973 to 1974-75 there was again a big slump in production particularly in the year 1972-73 and we were not able to achieve the level that was attained in 1970-71. These facts show that our foodgrain production has been highly variable and erratic in nature. We, therefore, start with a hypothesis that the peaks in agricultural production that we reach occasionally are short lived and we have not been able to lay a solid base for sustaining our agricultural production at a higher level.

*Department of Economics and Sociology, Punjab Agricultural University, Ludhiana.

Table 1 also shows the total production of pulses and oilseeds. Pulses are an important source of proteins for the majority of Indian population. Likewise the oilseeds form the primary base for fats of vegetable origin. The production behaviour of pulses, however, reveals that total pulse production through time has declined and its percentage share in total foodgrain production has also declined. The oilseed production also has not picked up and shows erratic behaviour. Thus, besides yearly fluctuations, we have imbalanced production pattern where important crops like pulses and oilseeds have lagged behind.

Factors Associated with Variability in Foodrain Production

The variability in foodgrain production arises either through changes in total area under foodgrains or in their productivity. Foodgrain production data read with the area under foodgrains show that the variability in foodgrain production is not explained by variability in area to any appreciable extent. There have been years when the area was quite high but the total production was low and vice versa. Looking at the second component i.e. the productivity of foodgrains as an explanatory variable in total production, it seems that, in general, the yield ot foodgrains as a group has not shown any increase over these years (Table 2). This is true for almost all the crops except wheat. Another fact that is clear from these figures is that there has been a rather close relationship between production and productivity. During the years 1970-71 and 1972-72 when the total foodgrain production was high the productivity was also higher. Similarly low foodgrain production during the years 1969-70 and 72-73 is associated with low productivity.

So far we have seen that foodgrain production fluctuated to some extent due to variability in area but largely due to variability in productivity. At this stage, we would like to add that variability in total area under foodgrains in largely a function of weather conditions, although the area under individual crops could be responsive to the relative profitability of one crop over the other. Likewise, the variability in yield is also largely affected by the amount of rainfall and it overshadows the effect of use of other inputs like improved seeds and fertilizers which have a bearing on productivity.

The Dominant Role of Weather

The discussion so far brings out clearly that rainfall is the most pre-dominant variable governing foodgrain production in the country.

This is bound to be so for the reason that even at present we have only about 25% of the area under assured irrigation. The remaining area is at the mercy of the rain gods. The assured irrigation facilities are found only in few of the states like Punjab, Haryana, Tamil Nadu, etc.

The Role of New Technology

At this stage it is pertinent to examine the role of new technology in the context of increasing foodgrain production. At the outset, it may be mentioned that new technology is limited in scope and coverage. Only few areas have come under the influence of new technology. These are Punjab, Haryana, Western U.P. and some other isolated pockets. The introduction of high-yielding varieties of seeds is primarily governed by the availability of assured irrigation. It is for this reason that new technology has permeated in areas mentioned above which have better irrigation facilities.

Further, the introduction of high-yielding seed varieties has taken place in only a few crops, the major one being wheat (59·9%) followed by paddy (25%). Other crops like Bajra (22·5%), jowar and hybrid maize crops have been influenced to a very limited extent It is thus evident that even in these crops the area under HYVs is very much limited and the area under HYVs to the total area under the crops is rather small.

During the years when there is a slump in agricultural production people often go to the extent of calling the new technology a failure or a partial success. However, one needs to analyse the facts objectively before reaching at this hasty conclusion. We would like to point out that during the years when there is overall set-back to foodgrain production in the country, it is not the areas under the influence of new technology which have failed us but it is the other states which in the normal years account for a large proportion of the total production, which are responsible for the greatest set-back to the production.

The figures reveal that it is in the states like Gujarat, Maharashtra, Orissa, Rajasthan, Bihar, etc. that the inter-year variability in production is the highest. On the other hand, this variability is much less in states like Punjab. Thus, it is the areas under the orbit of new technology which keep the tempo of production even in bad years like 1972-73 to 74-75. The states where things go wrong are the ones having very low proportion of irrigated area and are drought-prone.

To sum up the discussion we can say that India is still far away from attaining the stability in agricultural production and if past is any guide to the facts before us and when we have still to depend largely upon the rains we could still expect jolts in production in the future also. Whenever there is a set-back to production it should not be construed to be a failure of the process of new technology or the policy. Likewise, the success on the food front should not be largely ascribed to the success of some policy measures as has been done recently. We should be frank enough in admitting the role of generosity of the rain-gods in this connection. Indian agriculture is still the proverbial gamble in rains although we have been able to blunt the edge of weather to some extent.

We are not suggesting any panacea for the problem of highly fluctuating grain production which has stayed with us and is likely to be there in the near future also. But one thing is very clear. Since 3/4th of the area in the country is rainfed, dry farming technology is the most important component of our agriculture. The research efforts need to be directed to develop a viable package of dry farming technology so that we can reap reasonoble harvest, even in rather dry years. Further, to achieve stability in foodgrain production and make it more broad-based the pace of bringing additional area under irrigation need to be accelerated. Water management is an area which should receive the topmost priority in research programmes.

Table 1

Foodgrain Production in India (000, m. tons), 1967-68 to 1975-76

Year	Total cereals	Total pulses	Total foodgrains	Percentage of pulses to total food-grains production	Oilseeds (groundnut, rape and mustard)
1967-68	83351	12236	95587	12.8	7311
1968-69	83595	10418	94013	11.0	5978
1969-70	87810	11691	99501	11.7	6651
1970-71	96235	11576	107811	10.7	8028
1971-72	93599	11058	104657	10.5	7163
1972-73	85723	9485	95211	9.9	5777
1973-74	93857	9754	103611	9.4	7490
1974-75	90667	10396	101064	10.2	7202
1975-76	—	—	116000	—	—

Source : Statistical Abstracts of Punjab.

Table 2

Per Hectare Yield (kgms) of Foodgrains in India, 1967-68 to 1974-75

Year	Rice	Jowar	Bajra	Maize	Wheat	Barley	Total Pulses	Total Foodgrains
1967-68	1031	543	409	1125	1111	1043	N. A.	N. A.
1968-69	1080	520	320	1000	1170	880	N. A.	N. A.
1969-70	1071	522	426	968	1209	982	530	810
1970-71	1134	470	620	1270	1299	1103	524	872
1971-72	1145	461	455	892	1382	1028	501	858
1972-73	1073	435	324	1084	1254	967	474	813
1973-74	1151	530	519	937	1158	887	427	827
1974-75	1061	645	287	967	1338	1075	460	831

N. A. : Number not available.

Source : Statistical Abstracts of Punjab.

SADHANA Beauty CREAM

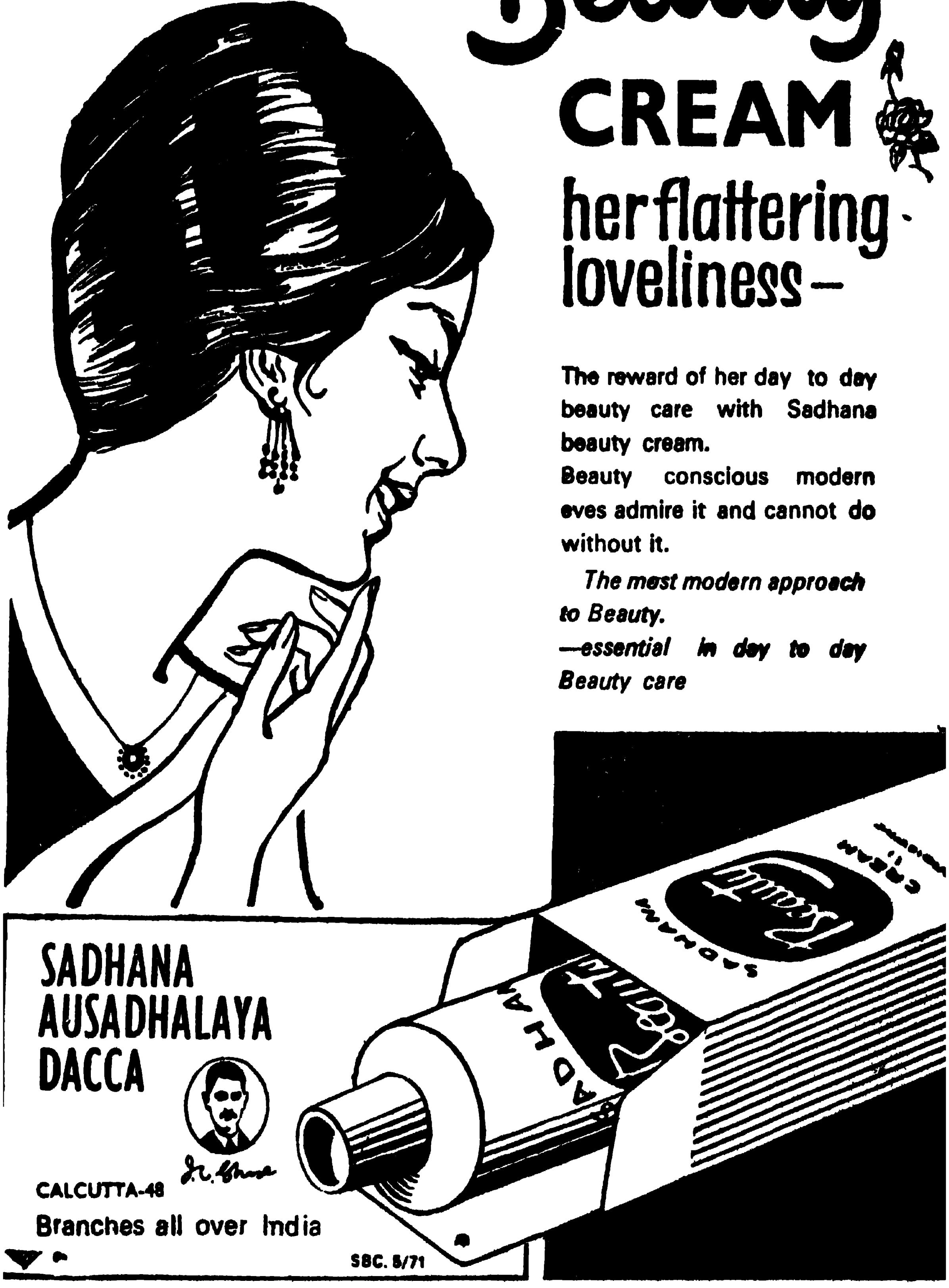
herflattering loveliness –

The reward of her day to day beauty care with Sadhana beauty cream.

Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.

—essential in day to day Beauty care



SADHANA
AUSADHALAYA
DACCA

CALCUTTA-48

Branches all over India

SBC. 5/71

Inland Rs. 30.00 (Net)
Foreign US $10.00
Postage by surface
US $2.00
This Copy Rs. 5.00

R. N. No. 5182/57

Published by H. Roy from 10, Galiff Street, Block 5, Suite 64, Calcutta-3 and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh Lane, Calcutta-6. Editor : Himansu Roy. Phone : 55-0477

ECONOMIC AFFAIRS

- The Bonus Issue Some Reflections
- Indian Gem and Jewellery in World Market
- The Need for Multi-Level Industrial Planning in India

Vol. 22, No. 11 NOVEMBER 1977

Revised Annual Subscription Rates :

India :	**Rs. 30.00**
Foreign :	**US $ 10.00**
Postage :	**$ 2.00 (by surface)**
Single Copy (ordy.)	**Rs. 2.50**

Outstation cheques shall bear Rs. 5.50 extra.
Effective from January 1977.

Sd/ M. Roy
Manager,
Economic Affairs

15 September 1976

MINISTRY OF HOME AFFAIRS

DEPARTMENT OF PERSONNEL AND ADMINISTRATIVE REFORMS

ASSIGNMENT OF INDIAN EXPERTS ABROAD

The Department of Personal and Administrative Reforms register experts with educational qualifications of the graduate level and above desiring to take up assignments in the developing countries of Asia, Africa and Latin America, for a period of two to three years. Candidates who are so registered are sponsored as and when demands suiting their qualifications and experience are received from foreign governments.

2. Applications for registration are invited from :—

(1) Medical personnel holding at least the qualifications of M.B.B.S. or equivalent.

(2) Engineering and other technical personnel holding at least bachelor's degree or equivalent.

(3) Teachers in different subjects holding B. Ed. or equivalent.

(4) College/University Lecturers and other academic personnel holding post-graduate qualifications.

(5) Chartered Accountants, Statisticians, Economists and others possessing qualifications equivalent at least to a bachelor's degree and experience of a specialised nature.

3. Persons with less than three years' professional experience after obtaining the requisite qualifications need not apply.

4. Experts wishing to be enrolled in the Foreign Assignment Panel may obtain the necessary forms from the Foreign Assignment Section, Department of Personnel and Administrative Reforms, New Delhi-110001, by sending a self addressed, stamped (60 paise) envelope size 10×22 cms. Applications from persons employed by the Central or State Governments, Public Sector Undertakings, Universities and Quasi-Governmental Organisations should be supported by a certificate from the employer that the applicant will be released for service abroad on foreign service terms in public interest (i.e. retaining the applicant's lien and protecting his seniority) within thirty days of selection, if need be, and also stating the total period for which the applicant could be released for service abroad. This consent of the employer to the release of the expert shall be valid for a period of one year. Registration of candidates made prior to 1st September, 1974 is no longer valid and they may apply afresh.

5. Persons registered after 1st September, 1974 need not apply afresh until the expiry of three years from the date of registration, when their registration will lapse.

6. These registrations will be valid for a period of three years subject to annual renewal of the certificate described above in the case of employees of Governments or parastatal organisations etc.

7. Persons who have attained the age of 60 years need not apply. Applications of persons registered earlier will also not be considered after they attain the age of 60 years.

davp 561 (EN-25)/77

SHORTLY AVAILABLE !!

THOROUGHLY REVISED AND UPTODATE
Fourth
EDITION

A TRACT ON MONEY

By
RABINDRANATH MITRA
B.SC. (ECON.), (LOND), BAR-AT-LAW
Formerly, Principal, Ananda Mohan College, Calcutta
And
DR. HIMANSU ROY
M.A., M.COM., Ph.D.
Principal, Ananda Mohan College, Calcutta
Editor, Economic Affairs, Calcutta

This edition includes almost all the current developments in monetary theory and international monetary cooperation, including the collapse of Bretton Woods and re-emergence of International Monetary Fund.

Some Highlights :

Value of Monery : Saving and Investment : Consumption : Multiplier and Acceleration Principles : Growth Theory : Monetary Theory of Interest : Theory of Inflation : Business Cycle : Exchange Rates and Exchange Control : International Monetary Cooperation.

THE WORLD PRESS PRIVATE LTD.
CALCUTTA 12

Contents

Editorial

405 **Overenthusiasm**

407 **Review**

Articles

Abdul Aziz
409 **The Bonus Issue—Some Reflections**

Jyoti Kaila
421 **Indian Gem and Jewellery in World Market**

H. C. Mehrotra and D. K. Kulshrestha
428 **Development of Banking in Rural Areas**

Radha Raman Singh
433 **The Need for Multi-Level Industrial Planning in India**

ECONOMIC AFFAIRS

Volume 22 November 1977 No. 11

Overenthusiasm

The Union Minister of Commerce and Civil Supplies Mr. Mohan Dharia is reported to have said that the Janata Government has totally rejected the dangerous concept of export-led growth as it has resulted in export of mass consumption goods at the cost of domestic consumers. He has further reported to have said that the Janata Government's "new approach" is to make the exports traditional goods oriented. Mr. Dharia's speech will certainly have cheers from the commonmen in expectation that they will shorty have enough of consumption goods at low prices. But political cheers are not necessarily the cheers for an economic policy. The fallacy of Mr. Dharia's new approach is exposed in his vital assumption that the level and quality of consumption goods now moved with the possibilities in world market will continue, i.e. the resources will not be diverted from home reoriented consumption goods sector to export oriented production sector. This may not be possible if and only if the home market is more paying, or the State itself enters in the production of consumer goods ostensibly for the purpose of feeding the home market diverting resources from export oriented production sector, which is a remote possibility both in time factor and in the Janata Government's zeal for promoting private initiative in economy. We are afraid, Mr. Dharia would not have thought of this new approach had not the Emergency left for the country over Rs 3000 crores of foreign exchange and million tonnes of buffer stock of foodgrains. In economic front the Emergency may be interpreted as a policy of denial of essential goods to home market backed by drastic monetary, fiscal and labour discipline and expansion of public sector to rapidly build up reserves of foreign exchange and foodgrains.

Long before Emergency the country had lost its past holds on traditional exports in world market and was bound to explore the field of non-traditional goods for exports. The success was rapid resulting from aid and forced creation of exportable surplus to feed the foreign exchange component of export industries. There is nothing unusual in it. The developing countries need to have comfortable export surplus to free them from political strings of aid and to finance the growth projects that involve foreign currency and technology. It also gives a status in world economy to dictate terms of trade. Japan, Taiwan and South Korea are very important examples who have gone up to the height of world trading power pursuing the denial to home market policy and finally furthering all possible export promotional policies. In those countries the people have no ill feelings to their Governments as they have in return now and in posterity a growth economy. This is all the more important in the case of a developing country like ours where the propensity to consume is very high. That is we have to divert an unproportionate amount of resources to feed the home consumers from export industries and this will result in the fall of saving proportion in national income and consequently will affect investment, which will bring in more and perpetual misery to them. On the other hand, export surplus is a sort of having foreign income invested in national economy to have multiplier effect leading to more production for both home and foreign absorptions.

Mr. Dharia seems to have thought that the scarcity phase in our economy is over. But the reality is the reverse. Our economy is standing on false pillars. The truth of it will come to light again when the foreign exchange reserves and the food stock will continue to erode. The economy is yet to build up its in-built strength to absorb shocks and ensure growth with stability and social justice. Even in that case, as in any advanced country, the export performance is a matter of constant conscious effort no matter if it is at the cost of home market as otherwise the national economy as a whole may face a crisis of immeasurable depth.

All this does not prescribe that the export surplus should be built up by thrashing the commonmen to a level of starvation. What is needed is a welfare equation between need of the growth economy and the minimum need of the commonmen (and to counter the inflationary pressure too). The latter can wait for tomorrow for the fruits of growth if they are sure that they will come to them. But their experience is otherwise. The frittering away of foreign exchange in official foreign tours, liberalization of foreign exchange control, unplanned imports, lack of national food policy with relevance to the buffer stock, increase in money supply on political decisions and indisciplined labour policy have kept the commonmen asking the wisdom of seeing the growth and benefits in perspective.

Review

The New Petroleum Order, Les Presses De L'Universite Laval, Quebec, 1976.

Oil price policy of oil exporting countries has revolutionized the world trade and financial relations. The present work is a collection of some select research papers on oil diplomacy running from the transitional company to relations between governments.

In his paper on 'Transitional enterprises, exporter countries, and importer countries : their strategies and relations in the world oil industry' Mr. Zuhaya Mikdashi discusses the interests and approches of transitional enterprises, exporter countries and importer countries in oil with special reference to their performances and inter-group relationships. It is clear from his analysis that the exporter countries are aggressive, the importer countries are badly in defence and the oligo of transitional companies has successfully maximized the long-term returns by shifting the increase in oil prices on to the consumers. Mr. Raymond Vernon in his article, 'The influence of the U.S. Government upon multinational enterprises : the case of oil' concludes, drawing upon the history of oil diplomacy, "As long as internal structure and the external exterests of the United States retained the general configuration that existed in the 1970's, it could be expected that the tutelary role of the government over its international oil companies would be limited and indecisive." Mr. Eric Kierans in his paper, 'Governments and multinational corporations' rightly comments, "The corporation has become an end in itself and the act of incorporation a right without reference to larger social purposes." Mr. Hasan S. Zakariya in 'Convergence and divergence between the exporting countries : the OPEC experience' points out the differences of opinion of OPEC countries on specific issues although greater mutual interests have kept them closely united. There is no danger of any major rift in them. Mr. Melvin A. Conant in his article, 'Convergence and divergence between the importing countries : American policies and their impact in Europe and Japan' dwells mostly on American oil policies and their extended effects on the European countries and Japan. His view is that the energy crisis is to be faced as an engagement of mutual interests. Mr. Geoffrey Chandler in his paper, 'The role of the international oil companies' has tried to make out a case for the profit-margin of the international oil companies.

Poverty and Planning in India, Gangadhar Rakshit, 1977, The World Press Private Limited, Calcutta, Price Rs. 20.00.

Planning and poverty are two close friends in India. This puzzles many who expect that the former is a bid to banish the latter. This contradiction is also a source of much social unrest in a backward country where the level of poverty is a matter of human existence. A good many valuable studies have been made in the field of income and income distribution in planned developing countries, mainly India. Dr Rakshit's work is an addition to this with the notable features that it is simple in style, penetrating in analysis and persuasive in arguments. The measures he has suggested to remove poverty from India are quite well known and not that they have not been practised yet the poverty is on rise. As Dr. Rakshit's approach is one of reforms he could not go far from the four-walls that have protected poverty zealously to protect a social system.

The work covers the meaning and measurement of poverty, extent of Indian poverty, poverty and economic planning, the causes of poverty, measures taken and the suggested measures.

Issues and Themes, American Association for State and Local History, United States Information Service, New Delhi.

The issues and themes are expressed in select essays in American history and civilisation covering a nation of nations ; the land of plenty ; certain unalienable rights ; a more prefect union ; working in America ; the business of America ; America in the world ; growing up in America ; life, liberty and the pursuit of happiness. The topics have been contributed by authors of eminence. The glorification of American culture and 'rights' and opulence have been well expressed in each essay.

The Bonus Issue—Some Reflections

Abdul Aziz*

The promulgation of the Bonus Ordinance in September 1977 set at rest all speculations regarding the bonus question. Bonus has now firmly established itself as a component of Indian wage structure and the provision binding the management to the payment of a minimum bonus of 8⅓% gives support to the position held by the working class all along that bonus should be treated as a deferred wage. The deferred wage status that was reconferred on bonus, particularly after the previous Governments had departed from this stand, and the likely extension of the provisions of the Payment of Bonus Act, 1965 to sectors and industries which were hitherto exempt from the Act has revolutionised the meaning and content of the concept of bonus. The purpose of this note is limited to tracing the stages by which bonus transformed itself from being an *ex gratia* payment to a legalised payment. Secondly, it is also proposed here to demonstrate how the opportunity afforded by emergency to further transform bonus payment from being a share in profits to a share in productivity—a change that would have built the claim for bonus on firmer grounds and made it more acceptable to all concerned.

Evolution of Bonus Payment

Bonus, as an annual *ex gratia* payment to workers by the prosperous establishments, originated during the First World War years. The rationale varied—some granting it as a *bakshish* to workers on festival days, and some as a war bonus following increased cost of living to workers on the one hand and unusual rise in profits on the other. In any case, bonus was paid *out of profits* and the payment was *ex gratia* having been made at the will of the employers.[1]

---

* Institute for Social and Economic Change, Bangalore.

[1] Incidentally the dictionary meaning of the term bonus is that which is given over and above what is expected as compensation for complying with the donor's wishes.

Thus when bonus originated, it was not meant to be a contractual payment. But the events that followed proved it other wise. Workers who got used to the annual bonus during the war and post-war years began to treat it as part of the remuneration system and did not hesitate to resort to strikes.[2] The disputes on bonus came to be settled through Government machinery though such settlements were *ad hoc* in the sense that no set criteria were followed. The settlement of industrial disputes by compulsory adjudication first under the Defence of India Rules and later under the Industrial Disputes Act, 1947 resulted in the formulation of bonus criteria as also the recognition of workers' right to bonus.[3] Even the Committee on Profit Sharing that was appointed in 1948 felt that the evolution of the principles to be followed in the determination of labour's share in the surplus profits was a tricky job.[4] Nevertheless, it is suggested that profit-sharing on an experimental basis might be tried in some well established concerns. As no action could be taken on the recommendations of the Committee, "profit sharing continued in the form of periodic bonuses awarded by industrial courts and tribunals".[5]

---

2. The general strikes resorted to in Bombay Cotton Textile Industry in 1919 and 1923 were said to be on the bonus issue. See Ramrakhiani I. K., Bonus—A Review, Bombay: The Office of the Commissioner of Labour, Government of Maharashtra, 1960, pp. 1-2. Quoted by Mathur K., "Bonus Legislation in India", Indian Journal of Industrial Relations, Vol. 1, No. 4 (April 1966), p. 473. Curiously, the need for organisation among them was felt by a section of workers in Karnataka when the bonus payment was stopped. Thus the non-payment of bonus and the subsequent strike by the workmen of Binny Mills, Bangalore, in 1920 led to the formation of the Binny Mills Workers' Council. This encouraged workers of others textile mills to organise themselves into trade unions. Cf. Cutinha R., A Study of the Growth and functions of the Trade Unions in the Cotton Textile Industry in Bangalore City (unpublished), the National Institute of Social Sciences, Bangalore.

3. Workers' right to bonus was said to have been first recognised by the Industrial Court, Bombay, when it observed that workers were entitled to bonus if (i) there was a gap between the wages paid and the living wage standard, (ii) and/or there were profits during the year to which the workers had contributed. See Mathur K., "Bonus Legislation in India", op, cit., p. 458.

4. Report of the Committee on Profit Sharing, New Delhi: Government of India, 1938, p. 7.

5. Report of the National Commission on Labour, New Delhi: Government of India, 1969, p. 253.

The L.A.T. Formula

An outcome of the operations of adjudication on bonus was a formula relating to the working out of the bonus amount by the Labour Appellate Tribunal in 1950 which has since been described as the Available Surplus Formula or the LAT Fomula. According to this formula bonus amount was to be arrived at out of the available surplus which in turn is the balance of gross profits after deducting what were called the prior charges viz.,

1. Reserves for rehabilitation and replacement,
2. Depreciation,
3. Income tax, and
4. Return on paid up capital and reserves used as working capital.

The proportion of the available surplus that may be distributed as bonus was not fixed by the formula but was left to be decided by the Tribunals on merits of each case bearing in mind the needs of industry, labour and capital.

An important point that became clear from the available surplus formula is that bonus was no more an *ex gratia* payment which an employer could pay at his discretion; the workers had a claim to bonus as a form of employee's remuneration in so far as they contributed to the profits of the concern. But by insisting that bonus should be paid out of available surplus arrived at after making provision for dividends and prior charges for the sustenance and expansion of the industry the formula rejected the deferred wage theory of bonus.[6]

The Payment of Bonus Act, 1965

The available surplus formula thus saved the employers from the implications of the deferred wage theory of bonus which would have bound them to recognising bonus as a prior charge. However, they were still expected to face the prospect of sharing the available surplus with labour. To avoid this prospect or, at least, to reduce the bonus amount the employers soon found a loophole in the formula. The employers suddenly became rehabilitation-conscious and started claiming rehabilitation charges out of proportion with the profits with a view to wiping off the available surplus.[7] Such practices indulged in by the employers not only increased the number of disputes but forced the workers and the employers to seek revision of the formula with the Supreme Court. The latter while recognising the drawbacks inherent in the formula suggested that this was a question which might be decided by the legislature on the basis of recommendations of a high-powered Commission. Following similar suggestion made by the Standing Labour Committee which met in 1960 the Government appointed the Bonus Commission in 1961 to reconsider the concept of bonus and the principles of its determination.

---

[6] The trade unions had been pressing the authorities to treat bonus as deferred wage. This is based on the demand that the workers had the right for living wage which the Indian industry is unable to pay at the current stage. However, to bridge the gap between the living wage and the actual wage paid, it was argued, a portion of the profits of the concern may be paid to the workers at the end of each year as deferred wage for the work already done so that the total wages may approximate to the living wage norm.

The Bonus Commission which submitted its report in January 1964 made the following observation with regard to the definition of bonus :

> "It is difficult to define in rigid terms the concept of Bonus but it is possible to urge that once profits exceed a certain base, labour should legitimately have a share in them. In other words, we think it proper to construe the concept of bonus as sharing by the workers in the prosperity of the concern in which they are employed. This has also the advantage that in the case of low paid workers such sharing in prosperity augments their earnings and so helps to bridge the gap between the actual wage and the need based wage".[8]

The gap theory implicit in the above definition of bonus was made explicit by the Bonus Commission when it recommended a guaranteed minimum bonus at the rate of 4% of the earnings (basic wage and dearness allowance) or Rs. 40 whichever is higher, irrespective of the firm making profits or incurring losses. At the same time, the Commission also retained the idea that bonus should come out of profits for obtaning higher bonus by relating bonus above this minimum to the allocable surplus coming from the profits of the concern. By fixing a ceiling of 20% on bonus payable during any year the commission facilitated "set off" and "set on" arrangements for the shortfall and excess of the allocable surplus during any year.[9]

---

[7] The industrial tribunal which went into the bonus dispute in respect of the Associated Cement Company Ltd. Bombay for the year 1953-54 found that the company in its calculation of the annual rehabilitation costs had unduly reduced the figures relating to the life of fixed capital and inflated the coefficient of the rise in prices over this period. Quoted by Mathur K. op. cit., p. 459.

[8] Government of India, Report of the Bonus Commission, New Delhi; Government of India, 1964, p. 107.

The Payment of Bonus Act, 1965[10] which incorporated these recommendations prescribed a formula of prior charges to arrive at the allocable surplus out of which bonus is to be paid. The prior charges to be deducted out of gross profits to arrive at the allocable surplus are :

1. Depreciation as per the provisions of the Income Tax Act ;
2. All direct taxes including the super profit tax :
3. Return of 8.5% on paid-up capital and 6% on reserves ; and
4. Remuneration to the proprietor or working partners at 25% of the gross profit after providing for depreciation subject to a maximum of Rs. 48,000 per annum per each partner.

Unlike the LAT formula, the formula suggested by the Bonus Commission prescribed that 60% of the allocable surplus (67% in the case of foreign companies) should be distributed as bonus among all the employees drawing a wage or salary up to Rs. 1600 --but the quantum of bonus payable would be constant for wage/salary beyond Rs. 750 which is at the amount payable for the latter.

The Bonus Review Committee

Sometime after the passing of the Payment of Bonus Act there were demands from labour for raising the minimum bonus from 4% to 8⅓%—a demand which popularised the idea of "13 months' wages for 12 months' work". The Bonus Review Committee that was set up in April 1972 to review the scheme and operations of the payment of Bonus Act submitted an interim report in September 1972 raising the minimum bonus to 8⅓% subject to a minimum of Rs. 80. Accepting the recommendations the Government brought an Ordinance immediately afterwards. The Bonus Review Committee which submitted its final report in September 1974 retained the 8⅓% as minimum bonus but recommended that the employees drawing up to Rs. 2000 be eligible for bonus—all those in the pay range of Rs. 1000 to Rs. 2000 to get bonus at the rate admissible to those having a pay of Rs. 1000.

---

[9] This idea is not new. A five-year agreement entered into between the Ahmedabad Millowners' Association and the Textile Labour Association, Ahmedabad in 1955 had provided for a minimum bonus of 4.8% of basic wage and a maximum bonus of 25% of basic wage with provision for "set off" and "set on."

[10] The Act applied to all factories coming under the Factories Act, 1948 and all of those establishments employing 20 or more persons but excluded the departmentally run public sector undertakings.

The Payment of Bonus (Amendment) Act, 1976

But the declaration of national emergency in June 1975 changed the fortunes of the workers. As the Government had not come out with an Ordinance for the subsequent year (as it had done for the previous two years) in regard to payment of bonus at 8⅓%, the employers continued to pay bonus at 4% as minimum. Added to that, the Government reduced the minimum bonus by an Ordinance in September 1975 to 4% and made minimum bonus payment subject to the availability of allocable surplus. The Payment of Bonus (Amendment Bill) 1976 as passed by the Parliament in February 1976 linked bonus to "allocable surplus" and clarified that bonus was payable only on the basis of profits or on the basis of production or productivity.

The Amendment effected to the Payment of Bonus Act in 1976 had serious implications for both the quantum of, and basis for, minimum bonus payable. The minimum bonus payable was reduced to 4% and what is worse from workers' point of view was that the minimum bonus was payable subject to the concern making profit—even if it were nominal. The concerns which did not make profits were not called upon to pay bonus. However, there was a saving clause viz., that bonus could be negotiated if there was improvement in production or productivity.

The Reversal

The shift from the deferred wage content to profit-sharing or sharing of gains of increased production and productivity appeared to be final when the former Prime Minister in her inaugural address at the Convention held in Delhi under the auspices of the National Productivity Council on November 10, 1976 described the prevalent system as the illogical system of bonus and urged that the parties may instead enter into long term productivity agreements. But this shift did not prove to be final. For the coming into power of the Janata Party at the Centre which had promised an 8.33% minimum bonus in its election manifesto activated the unions to getting this promise kept up. Bowing down to the immense pressure from the working class the Center announced in August 1977 its decision to implement the provision of 8.33% of minimum bonus and the same was incorporated in the Payment of Bonus (Amendment) Ordinance that was promulgated in September 1977.

Bonus Payment : Profit or Productivity Link ?

The transformation of bonus from *ex gratia* payment first into a means of sharing profits of the concern to which workers had contributed and later into deferred wage is a major gain to the working class. The acceptance of the principle of a minimum bonus even under conditions of the concern not showing profits amounts to bonus being treated as a prior charge. The right of the working class to a minimum bonus appeared to have been conceded in the country even as late as 1969 when the National Commission on Labour observed :

> "A minimum bonus is now taken for granted by workers in the organised industrial sector as part of their emoluments. The employers too keep it in mind while making their calculations of the total wage bill. It has thus become a necessary adjunct of wages".[11]

The Commission had further observed that the system of annual bonus had come to stay and might continue in future. For, before the Commission even "Employers' organisations have not seriously debated the *raison d'etre* of bonus, but have by and large suggested changes in the formula which would be favourable to them".[12]

The foregoing observations of the National Commission on labour made as early as 1969 on the issue of bonus hold good even today ; possibly those observations may apply with a greater force today in view of what the present Government at the Center is contemplating on this issue. The spirit of Payment of Bonus Act, 1965 has been restored. Bonus has come to be recognised as part of the Indian industries' remunerative system. The only issue that needs to be sorted out is perhaps whether or not the departmentally-run public sector enterprises should be brought under the coverage of the Act.[13]

---

[11] Report of the National Commission on Labour, op. cit., p. 256.

[12] Ibid.

[13] Even in this regard serious thinking is reported to be going on at the Central Government Circles. The recent statement by the Railway Minister that railway men would get some cash awards in lieu of bonus is an indication to this.

Disadvantages of Profit-linked Bonus

Our quarrel is not with the practice of paying a minimum bonus in the event of the unit not making profits but is rather with the practice of linking bonus payment to profits. Linking bonus to profit which is determined by extraneous causes unconnected with the working efficiency of the unit is irrational. As a matter of fact, the workers and management of the various plants of the Indian Aluminium Company who realised this point tied bonus with production rather than with profits by an agreement entered into as early as 1956.[14] This point apart, there is one more problem. Once the allocable surplus is arrived at on the basis of profits for being distributed as bonus, the bonus amount payable to individual worker is arrived at on the basis of his "wages". Under the provisions of the Act, "Wages" of the workmen for purpose of bonus payment is defined to include basic wages and D.A. This linking of workers' bonus to his basic wage and D.A. particularly in the case of units which pay bonus at minimum rate will surely escalate bonus with future rises in price level. To some extent this may act as a hedge against the fall in real wages caused by price rise but the disturbing prospect is that "bonus becomes a function of consumer price index"[15]. This will amount to the repetition of the mistake committed at the time of evolving a separate component of D.A. in the wage structure. For, linking individual workers' bonus to cost of living index, as is the case with D.A., would make this payment unrelated to effort. Consequently, bonus as a wage component would fail to incorporate the much needed incentive element in the wage payment.[16]

Productivity-linked Bonus

It is in this perspectvie that the question of linking bonus to productivity rather than to profits was debated first when the Bonus Commission was appointed later when the Bonus Review Committee was appointed. Unfortunately, the concept of productivity-linked bonus did not receive the attention it deserved. The Bonus Commission which considered the productivity-linked bonus proposal found that both on account of "the objections to the proposal by large sections of employers as well as almost all the unions" and on account of the "practical difficulties inherent in any such proposals could not support this proposal.[17] But the Commission observed that where the parties concerned opt for such a scheme in substitution of bonus based on profits which was recommended they are exempt from the scheme recommended.[18] It is this recommendation which attracted section 32 (VII) in the Payment of Bonus Act of 1965 and section 31A in the Payment of Bonus (Amendment) Ordinance of 1975 which provided for payment of annual productivity-linked bonus in lieu of profit-linked bonus. But these provisions had all along been ignored by the parties. The Bonus Review Committee which considered, among others, the issue of relating bonus in some way to production or productivity found that none of the parties who appeared before it supported the idea of productivity-linked bonus on the ground of impracticability and the committee was also unanimous in not recommending a bonus linked to productivity in lieu of profit-linked bonus.[19]

---

[14] Quoted in "Report of the Bonus Commission", op. cit., p. 27.

[15] Mathur K., op. cit., p. 469.

[16] Commenting on the potentialities of profit bonus as an incentive payment system the Bonus Commission observed : "The profit bonus system has little direct incentive effect......An annual but uncertain bonus varying from year to year and paid long after the close of the financial year can hardly act as an incentive to greater effort", Report of the Bonus Commission, op. cit., p. 107.

Two of the pracial difficulties to which attention was drawn were :

1. It may be easy to measure production but difficult to measure productivity and even more difficult to apportion the contribution of labour to productivity.
2. Increased production and productivity would not mean more profit as the latter are determined by market conditions which are external to the unit of production.[20] If there were no profits even after increase in production and productivity, should the workers be penalised for promoting higher levels of productivity ?

---

[17] Ibid,, p. 108.

[18] Ibid.

[19] Bonus Review Committee, Interim Report, New Delhi : Government of India, 1972, p. 14.

[20] This point is better illustrated by an INTUC leader when he observes : "Indeed, there are certain industries even today, where workers are willing to increase productivity or production ; and their problem seems to be either their inability to market the production already made at economic prices, or their desire to curtail production and retain or increase their profit-margin through shortages." Ramanujam G., "Productivity-linked Bonus", a paper submitted to the 27th All India Annual Conference of Indian Institute of Personnel Management held in March 1977 at Bangalore, pp. 2-3.

It may be noted that these problems are not so formidable as to scare us away from the proposed linking of bonus to productivity. It may be noted, measurement of productivity may be difficult but not impossible. Efforts have all along been made in India to evolve a scientific measure of labour productivity.[21] Applying the results of such efforts it should be possible to lay down guidelines for the evolution of productivity-linked annual bonus. In the evolution of a productivity linked bonus three issuses are involved :

1. developing a measure of productivity in the specific units of production ;
2. determining the norm or base of productivity level above which bonus becomes payable ; and
3. estabilishing a relationship between productivity and bonus.

The norms used in India for the measurement of labour productivity are past performance, past costs or standard time data. Based on these norms, the National Productivity Council evolved 11 models of measurement of productivity and distribution of gains between labour and management arising out of increased productivity.[22] The management and workers who are interested in evolving a productivity-linked bonus may do well to look to these models for guidance and evolve on the basis of these models acceptable schemes of annual bonus based on productivity.

The foregoing is meant only to dispel doubts regarding the feasibilty of measuring productivity and the related issues. However, there is the issue raised by the workers viz., if there were no profits even after increase in productivity should the workers be penalised for promoting higher levels of productivity. To overcome this difficulty, as it were, some attempts were made to evolve a formula of bonus which combined both productivity and profit criteria. As an illustration, the following extract taken from a paper[23] may be considered :

---

21. For a comprehensive work on attempts to measure labour productivity in India see Labour Bureau, 'Measurement of Productivity in Manufacturing Industries in India : A Review of the Methodology Adopted in Different Studies, New Delhi, Government of India.

22. National Productivity Council, Sharing the gains of Productivity, New Delhi : N. P. C., 1972.

23. Menon VKS, "Linking Annual Bonus to Production/Productivity" a paper presented at a seminar held by Kerala State Productivity Council on December 4, 1976, Quoted by Warrior S. K., "Annual bonus linked to production/ productivity", 'Productivity', Volume XVIII, No. 1, (April-June 1977), p. 9.

A.	When there is no allocable surplus and no increase in productivity	No annual bonus
B.	When there is no allocable surplus but there is an increase in productivity	Set off payment of bonus
C.	When there is allocable surplus but no increase in productivity	No bonus ; surplus set on
D.	When there is allocable surplus and increase in productivity	Bonus is payable

The Lost Opportunity

The foregoing discussion is only meant to drive the point that it is possible to evolve some kind of a productivity measure and that it is also possible to combine the productivity and profit criteria to take care of the situation arising out of workers not getting bonus in the event of a rise in productivity which is accompanied by a fall in profits. Once these hurdless are crossed then the only hurdle in the way of linking bonus to productivity is the acceptability of the idea to workers and management.

The Bonus Commission quoting extensively the replies received from the employers and trade unions[24] observed that there were objections to the linking of bonus to productivity. But much change appears to have occured since then in the attitute of both the parties. During the emergency (1975-77) owing to Government Policy both the employers and the workers tended to veer themselves round to the point of accepting the productivity-linked bonus. The change in workers' attitude was hastened by the promulgation of the payment of Bonus (Amendment) Ordinance, 1976 which knocked the minimum bonus payable under condition of the unit not making profits. The working class realised that it would be advantageous to have the bonus linked to productivity which is a certainty to profits which may be doubtful. The frantic pleas of an INTUC leader which is typical of the stand of the trade unions may be quoted to show how anxious the working class was during that time for a productivity-linked bonus.

> "Labour has been demanding production/productivity based bonus since the recent amendments of the Act, and the employers are generally opposing consideration of any such payment. All the while it was the employers who were trying to make labour understand that any additional payment must

---

[24] Report of Bonus Commission, op. cit., pp. 23-27.

> come out of additional productivity or production. Labour was not very enthusiastic so long in accepting this stand, as labour was but one of the several factors that contributed to increase in production and productivity and could not, therefore, risk the claim. But now that labour is demanding production/productivity bonus, let not the employers turn tail and refuse to countenance such a demand in the knowledge that if they do not agree there can be no production/productivity bonus".[25]

The revised stand of the workers has been construed not as a conviction about the need for linking bonus to productivity but as a result of the shrinking of the annual bonus due to amendments made to the Payment of Bonus Act, 1965 recently.[26] Nevertheless, the climate appeared to have been highly conducive to getting the working class agreeing to the linking of bonus to productivity. Linking bonus to productivity would have been a first but a significant step in the direction of relating employee remuneration to productivity —a step that would have revolutionised system in India. Unfortunately this did not happen. The payment of Bonus (Amendment) Ordinance of September 1977 brought back under pressure from workers the old concept of profit-linked bonus. That appears to have closed the possibility of bonus getting linked with productivity. This also represents the case of lost opportunity for the Government to give a new direction to the whole question of employee's remuneration.

---

[25] Ramanujam G., "Productivity-linked Bonus", op. cit., p. 6.

[26] Krishna Pillai P. N., "Linking Annual Bonus to Production/Productivity" and Stephenos G., "Annual Bonus", papers submitted to the 27th All India Annual Conference of Indian Institute of Personnel Management, op. cit.

Indian Gem and Jewellery in World Market

Jyoti Kaila*

From time immemorial India has been the home of gem and jewellery. But Islamic culture gave sophistication and refinement to Indian jewellery. It has been a moving process and the genius of Indian crafstman has helped the tradition to continue through centuries in spite of the shifting of political scenes. The story of Indian jewellery is the story of a successful cultural synthesis.

Jewellery in India is a part of woman's life. Among some tribals it is not the clothes that cover the body but rows and rows of heavy silver and bead necklaces. Not only this, now there is a flourishing industry of cutting, polishing, polishing and setting of precious and semi-precious stones in India. India's pride of place in the story of diamonds is well established. Diamonds have been mined and fashioned into jewels since they were first discovered in the area of Golconda more than 2000 years ago. And now India has not only become the source of diamonds but the cradle of the art of cutting and polishing them.

The gem and jewellery industry in India is entirely export oriented and labour intensive providing employment to over a lakh of artisans and craftsman all over the country. Domestic production of diamonds, precious/semi precious stones, synthetic stones as well as pearls is very negligible as the national wealth is not being fully exploited. One would be surprised to know that 95% of the raw material for gems is imported while we have immense wealth in this country. Unfortunately we have not touched even five per cent of it. Some surveys reveal that Kashmir is rich in emeralds, Agra for diamonds, and so many other places for other gems but nothing has been done about it in spite of importing raw material at fabulous prices for the purpose of exporting finished products.

---

* New Delhi.

Most of the diamond polishing activities take place in the area of Surat (Gujrat) and Bombay is acknowledged as the diamond business centre. This is a cottage and small scale industry. Polishers work in small units, sometimes of family kind, and the use of contract labour is very common. Surat, the golden ancient city, has become a diamond town because of the spectacular growth of the diamond cutting and polishing units as cottage industry.

The industry has also spread to Palanpur in North Gujrat, Visnagar is Mehsana, Bhawnagar, Palitana, Gariadhar and Vallabhpur in Saurashtra and Bulsar and Navasari in South Gujrat. The introduction of electricity gave a further boost to the development of the industry.

A noteworthy feature of the Indian Gem and Jewellery industry is that although it is fully export-oriented, it depends entirely on the imported raw-material. Though roughs are imported and re-exported after processing yet this export oriented labour intensive industry is earning valuable foreign exchange by simply employing the trained labour in cutting and polishing gem stones or for making jewellery. About a decade ago India hardly figured in the list of gem and jewellery exporting countries. Now India is one of the leading exporters of this item. Costume jewellery is exported to more than sixty countries among which communist countries are the biggest buyers. The bigger and better buyers are the Netherlands, West Germany, Singapore, Israel, Autralia and the U.K.

Main items of India's gem and jewellery export are cut and polished diamonds, cut and polished precious and semi-precious stones, pearls, stone-studded gold and silver jewellery and synthetic stones. India is easily the largest diamond cutting centre in terms of the number of workers engaged and specialization in the polishing of small diamonds. The sizes range from 15 to 100 per carat. Diamonds form 85% of the total exports while precious and semi-precious stones are about 12% only.

In 1959-60 this export was very negligible, which was only Rs. 2.43 crores in 1963-64. Export trade was organized only when Mr. Manubhai Shah set-up an advisory committee in 1964 and in 1966 the 'Gem and Jewellery Export Promotion Council' was formed as a Government-aided all India apex body of the industry. With the establishment of this council exports have risen significantly and today India is one of the major diamond processing and exporting countries in the world.

Table No. 1 clearly depicts the growth of item-wise export of India's gem and jewellery after the establishment of the council.

Table 1

Value in Rupees (Lakhs)

Items	1966-67	67-68	68-69	69-70	70-71
1. Precious/Semi-precious & Synthetic stones	2138.26	3037.47	4476.02	4196.72	4189.87
2. Jewellery of other precious metals (Platinum etc.)	5.51	27.16	24.97	22.85	22.18
3. Gold Jewellery	57.36	44.99	79.03	38.49	40.10
4. Silver Jewellery	68,80	106.04	136.46	26.32	36.01
Total	2319.93	3215.66	4716.48	4284.38	4276.16
Rs. Crores	23.19	32.15	47.16	42.84	42.77

Value in Rupees (Lakhs)

Items	1971-72	72-73	73-74	74-75
1 Precious/Semi-precious & Synthetie stones	5151.46	7792.94	10671.49	9490.25
2. Jewellery of other precious metals (Platinum etc.)	20.99	19.10	22.85	12.02
3. Gold Jewellery	34.13	34.22	44.21	77.49
4. Silver Jewellery	22.43	35.69	81.43	269.92
Total	5229.01	7882.05	10819.98	9849.66
Rs. Crores	52.29	78.82	108.20	98.50

After the establishment of the Council, within two years exports have been doubled. It was only Rs. 22.56 crores in 1966-67 which rose to Rs. 46.00 crores in 1968-69. Once again these exports have more than doubled in a short span of two years. They jumped from Rs. 52.29 crores in 1971-72 to Rs. 108.20 crores in 1973-74. Unfortunately it declined to only Rs. 98.50 crores in 1974-75—one of the most difficult years especially for the export of gem and jewellery all over the world. This contraction in the sale of gem and jewellery occured because of inflation and recession which declined overseas market enquiries and the export of gem and jewellery from India was affected. The export of jem and jewellery from India was also affected due to the devaluation of currency of Israel, one of the main competitors of India for cut and polished diamonds, in 1974. She made matters difficult for Indian exports by lowering prices of its goods by 5% to 7%.

While the export of precious stones and semi-precious stones, non-gold jewellery and synthetic stones have come down the redeeming feature, however, is that the export of pearls, silver jewellery has shown an upward trend.

Now-a-days the export of cut and polished diamonds to consumer markets is increasing rapidly. There is a descernible shift in the direction of exports from distribution centres like Hong Kong, Isreael, Belgium to consuming centres like U.S.A., Japan & West Germany. During 1973-74—1974-75, USA was the top-most buyer of cut and polished diamonds from India. The export to Japan was also more than doubled in one year.

West Germany is the third biggest market in the world for Indian cut and polished diamonds and the second largest consumer market for coloured stones. In Germany the demand for small diamonds is consistent. According to Dr. Johanner Miller, leader of the Frankfurt Diamond Exchange Delegation, more and more West German women want for their wedding rings small diamonds in which India specializes at present.

Unfortunately Indian goods enter West German market through third countries like Hong Kong, Belgium and Israel. But direct exports of these goods from India can earn more foreign exchange for the country as there are very good indications in this direction. The excellent growth potential is capable of making substantial contribution to the foreign exchange earning of the country.

The fact that exports have shown a steady rise does not leave enough reason for complacency as competition is daily getting stiff, especially from Israel and Belgium—India's main competitors in the export of cut and polished diamonds. Therefore India will have to struggle hard to have a better share of the total world market due to this competition.

Diamond market in West Germany is developing very rapidly as more and more jewellery pieces are being sold. People seem to prefer to invest in diamonds as a hedge against inflation.

West Germany has virtually no diamond cuttings of its own. It depends on the imports of cut and polished diamonds to meet this increasing demand. Indian businessman should take advantage of this by effecting more direct sales of diamonds to this country, which will be in the interest of both the sides.

Besides, direct entrance, there are so many other problems. People want particularly large sized diamonds whereas Indian workers are specialists in the polishing of small diamonds.

Israel has highly developed the art of big diamond cutting. A prominent diamond merchant said once, "labour being cheap in India we get only what they can't do". Therefore, India will have to develop the fine technique of cutting big diamonds and precious stones if it wants to compete with Israel.

There is no demand for Indian style jewellery either in West Germany or in Europeon markets. But India can become a jewellery workshop for Europe by adopting its style and getting the designs from there. Such a development will be quite welcome.

In order to explore the possibilities of increasing direct trade in gem-stones between India and West Germany, a delegation from Frankfurt Diamond Exchange came to India in August '74 and was impressed by the capacity of Indian exporters to meet their requirements. In consequence, Indian Gemstone Fair was organized in June '75 in Frankfurt, which was a great success. It helped in developing and strengthening trade contacts in West Germany and Europe.

It is heartening to note that Indian exporters have succeeded in developing exports to non-traditional markets for cut and polished diamonds in countries like West Germany, France, Kuwait, etc., by the efforts of Export Promotion Council and the Government. The Council has already made vigorous efforts to develop the industry and promote trade through close liaison with the Government agencies and international institutions related to this business. Still in this field of growth Government do more in order to enable the industry to become one of the biggest foreign exchange earners.

This industry's dependence on imported raw-materials or rough diamonds is one of the biggest drawbacks. Functioning of MMTC in canalising imports of roughs is ineffective and the goods become expensive by atleast 10-15% making prices uncompetitive and thus their exports difficult. Now up to 20% raw-materials, especially diamonds, is canalized on all replenishment licences through the MMTC which does not meet fully the needs of the exporters.

MMTC's failure to obtain supply from primary sources is no bigger than that of the private trade and industry in that regard. It is advised that the purchase of roughs from MMTC should be optional and there should be no compulsion of purchase from them. When the quantity and quality available from MMTC are not satisfactory the release orders should be converted into direct licences.

By importing raw-materials from primary sources instead of through monopoly agencies like DTC (Diamond Trade Corporation), Government can save a great deal of foreign exchange thus saving the industry from being exploited. The Council has also tried to draw attention of the Government to the advantages of importing rough diamonds directly from the Soviet Union, Angola, Ghana, Zaire, Brazil and Venezuela. In this case exporters advise that they should be permitted to import raw-materials from primary sources as the MMTC lacks the necessary expertise in this line.

Continuation of import duty on roughs in India against a subsidy on roughs in Israel is another drawback in this field. The country had suffered a loss of atleast Rs. 18 crores in foreign exchange earning during the period from 1972-73 to 1974-75 on account of canalization of imports of roughs.

High duty of five per cent on the imports of rough diamonds and rough precious stones, 45% on rough semi-precious stones and pearls and 100% on synthetic stones is imposed. In principle no duty should be imposed on imports of raw material which is re-exported as finished product and not sold or consumed in the domestic market. To solve this problem, pertaining to import duty, facing the industry the Government should revise some of its policies in consultation with the actual importers and the Ministry of Finance. By abolishing import duty on imports of roughs uncut and unpolished stones, exports can be increased and there will be no problem in meeting the target of exports of Rs. 200 crores in a year. Besides canalising agencies should obtain supplies from primary sources.

The market is also in the grip of financial stringency and a few smaller firms are said to be facing payment difficulties. Therefore, industry requires extensive finance for labour charges, raw-materials and post-shipment export credit for 90-120 days. Israel, India's biggest competitor, provides to its diamond exporters ample cheap credit at six per cent rates of interest up to 180 days. But on the other hand in India not only the interest on credit is high it is quite limited both from the point of volume and the duration. Reserve Bank should liberalise its credit policy for this export oriented industry. It should extend the limit of consignment exports to a minimum of one year.

One other main thing that hampers these exports is the complicated procedure of actual exports. This procedure of exports of readymade jewellery should be made simple, realistic and practical.

It was suggested that a diamond bourse and trading hall should be settled where various Government departments could be stationed and procedural delays minimised. Besides, this, collaboration with big jewellery manufacturers abroad was also suggested but till now no solid steps have been taken.

Exporters are facing another difficulty in regard to exports to the rupee currency area. Either imports from these countries under the replenishment licences are not available, or the socialist countries prefer to sell them to the hard currency areas. Hence until a satisfactory arrangement is arrived at the interchangeability of replenishment licences may be permitted.

Efforts to boost exports only cannot solve all the problems. It will be only one-sided if production conditions are not improved. In the field of production, the sudden revival and development of the industry is owing to a spurt in the international demand of diamonds, particularly in the developed countries.

The growth of the industry is somewhat lopsided. A few big dealers who get the work done on job basis from small units control the industry. Though cheap labour is available no formal training is offered to new aspirants. This is one of the biggest drawbacks in the field of production, and needs special attention. More and more training facilities should be provided to new aspirants. At the initiative of the Gujarat Government, the Centre has approved a scheme for setting up a traning school at Surat with a view to providing scientific training on diamond cutting and polishing. The construction work for the school and hostel building is in progress. Some more training institutes of this type should be started at the earliest possible.

There is also a general shortage of skilled artisans in the industry. Mostly artisans are specialists in the cutting and polishing of small diamonds, when now-a-days in West German market, one of the biggest consumer and import centre for diamonds, and other markets, high pieces are in demand. Special training facilities for the introduction of the scientific technique of big diamonds cutting and polishing should be provided at the earliest at practical terms in order to meet the increasing demand of this item's market.

The industry is not only backward but also not highly organized. It still holds on the notion of the trade secrecy. A small unit can be started with an investment of Rs. 3000/- only. Strangely enough the industry leaders think the present machinery, equipment and

(Continued on page 432)

Development of Banking in Rural Areas

H. C. Mehrotra[*] and D. K. Kulshrestha[8]

The banks play an important role in restructuring the national economy. Therefore, the banks have a greater responsibility for the economic development of the country. India is a country of villages—a major portion of its population reside in villages. The development of India lies in the development of banks in rural areas. The attitude of the banks is diverted towards the rural areas only after nationalisation and they adopted a policy to open more branches in villages and to grant more advances to small farmers at cheap rates and easier conditions.

The following table depicts the development of bank branches in the rural areas :—

Number of Bank Branches in Rural Areas Alongwith their Percentage to Total Bank Branches in the Country

Year ending	No. of bank branches in rural areas	% of Rural Banks to total banks
June 30, 1969	1832	22.4
Dec. 31, 1973	6023	36.5
Dec. 31, 1974	6631	36.5
Dec. 31, 1975	7316	36.1
Dec. 31, 1976	8820	37.1
April 30, 1977	9146	37.7

The table explains clearly that the number of branches of the scheduled commercial banks in rural areas has gone up to more than five times within a period of about 8 years, as it was a little less than 5 times up to April 30, 1977. It proves that after nationalisation of major banks more emphasis is being given towards setting up of more and more branches in the villages and in small towns of the country. Out of 24,270 bank branches in the country, as many as 9146 were in the rural areas till April 30, 1977. Consequently, the ratio of population per bank branch in the country has come down to a remarkable extent. It was as high as 65000 in June, 1969, but declined to 29000 in December 1976, 26000 in December 1976 and 25000 in April, 1977. During the post-nationalisation period there has been a significant improvement in the population coverage of the commercial banks in various states and union territories. In June 1969, there were as many as 10 states and union territories, where the rate of population per bank branch was over one lakh, but now there is only Mizoram (not existed in 1969), where there is one bank branch for over one lakh of population. Rate of population per bank branch between July 1969 and December 1976 has come down from 188000 to 57000 in Assam ; from 206000 to 64000 in Bihar ; from 212000 to 62000 in Orissa ; from 116000 to 42000 in Madhya Pradesh ; from 118000 to 42000 in Uttar Pradesh ; from 114000 to 20000 in Jammu and Kashmir and from 69000 to 30000 in Rajasthan.

---

[*] Dean, Faculty of Commerce, Agra University, and Department of Commerce, Hindu College, Moradabad.

Coming to the deposits of the commercial banks, there has been an increase of more than three and a half times since nationalisation of 14 major banks, as the figure of total deposits with all the scheduled commercial banks has gone up from Rs. 4646 crores in June 1969 to Rs. 17,132 crores in December, 1976 and above Rs. 18,5000 crores in June, 1977. The deposits of the nationalised banks, which include major share from rural areas have gone up from Rs. 3885 crores in June 1969 to Rs. 11,355 crores in December, 1975. The amount of rural deposits, which was as low as Rs. 146 crores in June 1969 has gone up to 842 crores in December, 1974 and above Rs. 1500 crores in 1976. This increase in rural deposits gives full testimony to the fact that the banks have been gaining increased popularity in Indian villages.

Nationalised banks also give priority in granting loans to the rural and neglected areas at cheap rates and easy conditions. For this purpose, the Reserve Bank of India has formulated a number of schemes to grant loan for agriculture, small and village industries, small retailers, sericulture, paultry farming, etc. After nationalisation of 14 major banks the number of borrowers has increased by more than eight times till 1975-76. The additional loans under these schemes granted by the scheduled banks have increased from Rs. 441 crores in 1969 to Rs. 2836 crores in 1975. Out of the loan granted in recent years by these banks, as much as 39 per cent have been granted in neglected rural areas. Policy of charging differential rates of interest has also been adopted by these banks, specially in rural areas.

There has also been a significant rise in agricultural credit. Consequently, the total agricultural advances by the nationalised banks have gone up from Rs. 162.29 crores in June 1969 to Rs. 812.02 crores in September 1975 and above Rs. 900 crores in March 1977. The proportion of agricultural credit to the total credit of the nationalised banks, which was 5.5 in June 1969 has gone up to more than 8.0 between June 1970 and June 1974. It further rose to 10.0 in June 1975, 11.0 in June 1976 and nearly 13.0 in March 1977.

The President of India issued an Ordinance on September 26, 1975 for the set up of the Regional Rural Banks in the villages. Consequently, 5 such Regional Rural Banks were set up on October 2, 1975 at Moradabad and Gorakpur (U. P.), Bhiwani (Haryana), Jaipur (Rajasthan) and Malda (West Bengal). 35 per cent of the total capital of such banks is provided by the nationalised banks. In the beginning, it was proposed to set up at least 200 such banks in the villages every year. The number of such banks in the country till April 1977 was 676 being 164 in urban and 512 in rural areas. This also enlightens the fact that the banks are becoming more and more popular in our villages.

The facts and figures mentioned above reveal that the banks have over-hauled the conditions in our villages by making the villagers free from their long indebtedness to village *sahukars* and money lenders and by providing them finance at cheap rates and easy conditions. But, the position is not suffice, and there is a great need to spread over the banking habits among the villagers. A vast majority of villagers are still ignorant about the working of the banks. The population coverage of the bank branches in rural areas is still much more than that in cities and towns, being not less than 40000 people for one bank branch as against 25000 per bank in the country as a whole. Hence, there is a great deal to be done in this regard. For further expansion of banks and banking habits in the rural areas of the country, we can put forth the following suggestions :—

(1) Our rural areas require much spread over of banking habits. For this purpose the lead banks should come forward and should study and conduct surveys of the conditions and requirements of the rural credit within their jurisdiction and should chalk out credit schemes accordingly. Besides, it also requires much publicity and propaganda, for which the lead banks in collaboration with other commercial banks in the area should organise periodical seminars and let the villagers know the services being rendered by the banks alongwith advantages to them.

The seminars will serve two-fold purpose—on the one hand they will inculcate banking habits among the villagers and on the other they will be in a position to collect the information regarding rural credit and its requirements alongwith the suggestions from the villagers.

(2) The consumption needs in the rural sector are estimated to be about Rs. 170 crores per year, while the institutional agencies including the commercial banks are providing about Rs. 70 crores per year for consumption purposes. Therefore, the banks should also fulfil this credit gap by granting loans for consumption purposes in the villages.

(3) As recommended by the Banking Commission set up before the nationalisation of 14 major banks in the country, re-structuring in the banking set up is necessary. The banks should be reorganised according to the present requirements of the country specially in rural areas. The Commission suggested to organise all the scheduled commercial banks into one All India Bank divided into different Regional or Provincial Banks. The Regional Banks should be free to adopt a policy as per requirements within their regions.

(4) For developing banks in rural areas and supplying credit according to the requirements of the farmers and other villagers, the following suggestions should also be helpful for the purpose :—

(a) A detailed survey of the entire rural economy including aagriculture, its ancilliaries and village industries should be conducted ;

(b) Schemes of credit and banking development in rural areas should be finalised after mutual discussions and in consultation with the government agencies, village panchayats, input dealers and farmers, etc. ;

(c) Actually farmers do not require cash credit. They need agro-services. Therefore, the banks should arrange to supply them seeds, fertilizers, agricultural implements and so on and so forth by converting cash credit into such services ;

(d) Credit should also be provided for storage and marketing purposes by the banks ;

(e) Viable and implementable banking schemes on area approach basis should be formulated and lending policies and terms be modified, wherever necessary ;

(f) The factors abandoning the growth of credit, and also development activities, should be identified ;

(g) Rural credit structure should be reorganised to make it feasible and multi-purpose ; and

(h) Training programmes in rural banking and credit should be evolved and extension activities should be strengthened.

If the suggestions put forth above are materialised, the banks shall be in a position to serve the rural areas in the country to the desired level and the object of rural uplift shall be obtained. It will also inculcate the banking habits in our villages and bring them to the banks from the doors of the village sahukars and money lenders.

It is expected that the new Janta Government, which has decided to remove poverty and destitution from the country, will spread more banks and banking habits in the villages. But the new credit policy declared by the Reverve Bank of India in June 1977 is most disappointing. The reduction in rate of interest on deposits will adversely affect the savings in the villages. It is, therefore, suggested that the Government of India should reconsider the interest rate on deposits to safeguard the interests of the rural areas and also provide some extra incentive to inculcate the banking habits among the rural people.

(Continued from page 427)

methods of production are adequate and warrant no radical improvement.

Though the Council in its efforts to modernise the industry within the country has also set up some gem testing laboratories, training schools for craftsmen and artisans yet these efforts are insufficient, and there is much to be desired to be done.

The industry is unorganized at present and an industrial estate with special facilities for diamond cutting units can go a long way in its future growth.

Though some enterprises are well versed, they face an acute shortage of raw-materials particularly of superior quality raw diamonds. The DTC (Diamond Trading Company), London, holds near-monopoly in supplying rough diamonds throughout the world. The company supplies diamonds to 'Sight-holders' only who in turn send these to Gujarat for cutting and polishing on consignment basis. But this arrangement does not benefit the small units. Some other effective measures are required to be adopted in the interest of the betterment of the industry.

The Need for Multi-Level Industrial Planning in India

Radha Raman Singh*

The present pattern of industrial planning in India has largely tended to be looked at only from the national and state levels. At the national level, the public sector projects in important areas such as, steel, fertilizers, oil, machine tools, electrical etc., have been based on broad national considerations, as they must be. In spite of somewhat disappointing performance of most of these projects, it is undoubtedly the fact that in the long-run, they will contribute the expected dividends. Therefore, the planning of industries at the national level has been justifiably based on total considerations of long-term needs of the country.

At the state level, there has hardly been any industrial planning. Most of the states have only concentrated on vying with each other to provide the incentives for the location of the major public sector projects within their areas. Many of the large-scale projects, obtained with so much efforts, have not had the diffusion effect that was expected from them and have tended to operate in isolation with little impact on the environment around them. Though in a few states there has been an appreciation of the need for a balanced development of the various regions within the state by setting up Area Development Corporations, yet the idea of total development of a region through the application of all inputs, both scientific and technical, has not yet been taken up by most of the states in any meaningful manner.

Planning for industry, therefore, hardly exists except at the national and, to some extent, at the state levels. The process for generating a new entrepreneurship within the state which would utilise the opportunities available for setting up medium and small units at important locations has not been tapped as yet. Although, sporadic efforts are being made in isolated districts or in a few states, there is still no adequate awareness of the need for looking at industrial planning within a state in an integrated manner so that the existing potentialities of an area could be utilised fully for generating a momentum of growth. The expectations made in the beginning of the planning era that once the large industries are established within an area, there would automatically take place a diffusion of industrial growth to the tiers below, have not, in fact, been fulfilled. On the contrary, the larger urban centres have tended to become conglomerations attracting more industries while the relatively backward areas have remained untouched.

---

*Post-Graduate Department of Economics, L. S. College, Muzaffarpur, Bihar.

The growth of the small-scale sector also, which at one time was expected to provide the impetus for the push into the interior, has not really been up to expectations. The growth of this sector as a whole has been undoubtedly creditable as according to the Small Industries Development Organisation, the number of small units during 1966-75 increased by 317 percent, employment by 90 percent and investment by 174 percent. Furthermore, the share of the small scale sector in the total industrial production increased from 35 percent in 1972 to 38 percent in 1974 and the index of production during January-March 1976 increased to 14 percent as against 10 percent in the large sector, But the development of small units has not taken place uniformly in all the states as well as in all the areas and 80 percent of the new units set up in the small-scale sector have been in a few large metropolitan towns of the country. The financing institutions established by the government have also tended to provide industrial credit to the units in a few states with the result that industrial growth has been more or less localized isolated regions in a few states. It is true that attempts have been made to remedy the situation and Rural Industries Projects have been set up in a few districts to promote the growth of industries in rural areas but the impact of such programmes has been uneven and limited and what was expected to be a catalyst in the growth of industries in rural areas has become, in practice, merely a channel for subsidies and grants to institutions and individual that could not fully utilise them. The same has been the case with the Khadi and Village Industries Commission that was set up in mid 50s, to operate an elaborate programme of assistance to cottage industries as well as to spinning and weaving of Khadi. In spite of the idealism and enthusiasm, the work of the Commission itself has not made such impact on the rural scene as was expected from it at one time.

The basic defect in the planning for industry in the country has been that each of the sectors—large, medium, small and tiny—has been looked upon as a separate entity. There has been an inadequate meshing

---

1. Economic Trends, Vol. V, No. 16, Sept. 1976, P. 5.

between the different sectors and different levels of industries and consequently there hardly exists interlinkage between the rural and small scale as well as between the small scale and large scale industries. Government policies have tended to be mutually conflicting and since the agencies looking after the areas are different, there has been very little co-ordination in the plans and policies of the various sectors. The fact is that for the administrative and other reasons, a continuous specturm of activity has been broken up into three separate sectors that do not always see eye to eye with each other and at times seems to compete rather than supplementing each other's efforts.

Thus, the present pattern of planning in industry has shown reliance upon the large scale units as the central piece of picture and even if considerable support has been given to small scale sector, it has been more in pronouncements rather than in practice. There is even now an inadequate appreciation of the full potentialities of the small and medium units in generating a new climate for growth, On the other hand, the entrepreneurs have been shying away from less developed areas due to which employment imbalance has been further accentuated.[2] Unless the priorities are altered so as to make them the primary elements in the new strategy for industrial growth, such development will contnue to be confined to a few urban locations without making broad-based impact and the industrial sector cannot play a meaningful role for the economy as a whole.

The Perspective Dimensions

In a continental economy like India's, where there exists a greatly uneven distribution of human and natural resources and sharp contrasts in the levels of development, multi-level approach of planning starting from below is of particular significance in the context of national planning. There are three important dimensions at which the idea of multi-level planning is canvassed for formulation and implementation. These are macro—comparable to groups of states or at the national level; meso—state and sub-regions formed by groups of districts and blocks; and micro—the district, block and village.[3] All the three levels have distinct aspects in planning. While the macro level is concerned with regional goals and policies in relation to the national strategy, meso-level tends to be essentially in the form of multi-regional sectoral plans and the micro-level planning takes the whole hierarchy of central places and the hinterland as its focus laying emphasis on local needs and potentialities.[4] The need is to start planning from below having a functional interlinkage between all the levels of planning in industrial sector.

---

[2] Draft Fifth Five Year Plan, 1974-97, Vol. II,P. 2679 ;

[3] L.S. Bhat, A Regional Approach to the Urban and Industrial Development of the Kanpur Region, Published in "Regional Perspective of Industrial and Urban Growth—The Case of Kanpur", Edited by P. B. Desai, Macmillan & Co Ltd, 1969, PP. 230-31.

If one wants to look at planning from below, beginning will have to be made with the village as the basic unit for all planning purposes. But, however, a village is too small a planning unit for building the sevices and institutions needed for industry. There is, therefore, the need for taking a wider region as the basic unit for such planning. For this purpose, the Community Development Block which is thought to be an organised lowest unit to establish a link between an economic project and the local people by utilising existing potentialities of the area, may be taken as such a unit. It has a systematic administrative machinery which can be utilised for the successful implementation of the developmental programmes and assuring some degree of co-ordination at both offical and non-official levels. Therefore, a block is generally suggested to be taken as the basic unit for industrial planning at the lowest level.

In principle, the C. D. Block, though has been considered as the lowest development unit and the closest to micro-level planning, yet during the last 25 years of its experience, it has proved merely as an administrative unit and has failed in achieving the desired results on developmental fronts due to the lack of "spatial nature of functional integration."[4] This was the reason why the Fourth Five Year Plan[5] had stressed the need for identifying rural growth centres as the lowest unit for successful implementation of the integreted area development programmes and even the Fifth Five Year Plan[6] has supported the scheme. Therefore, within the block one or two potential growth centres should be identified for industrial growth. Growth centres should be those which are traditional Mandis or Market areas[7] having close linkages with the rural neighbourhood.

[4] R. R. Singh, "Multi-Level Planning for Achieving Integrated Area Development", Khadi Gramodyog, Vol. XXIII, No. 4, January, 1977, P. 210.

[5] L. K. Sen, "The Need for Micro-Level Planning in India", Published in 'Readings on Micro Level Planning And Rural Growth Centres' (ed) L. K. Sen, National Institute of Community Development, Hyderabad, July 1972, P. 5.

[6] Fourth Five Year Plan 1969-74, PP. 229-30.

[7] Draft Fifth Five Year Plan, 1974-79, Vol. II, P. 85.

They are usually towns with a population of at least 10,000 and have the basic infrastructural facilities such as roads, water, power, communication etc. These growth centres could be instrumental in providing the necessary impulses and could be used as the focal points for new industries. Through these growth centres, not village development alone, not town development alone, but village-cum-town development linking clusters of village should form the basis for future industrial planning of the countryside. Such industries will need to be woven round the raw materials available in that area. Agroservice centres can be located at these growth centres to serve the entire periphery. It is at the growth centre in the block where the initial industrial planning has to begin and fully use the resourecs—both human and material—available in the area. Entrepreneurs must be encouraged to set up simple industries, with the investment normally not exceeding rupees one to two lakhs and adequate technical support should be given to such persons to operate these centres.

The next tier for industrial planning is the district where larger industries, agro as well as consumer types, could be set up. Here again, the emphasis should be on the full utilisation of skills available within the district and identification of suitable entrepreneurs to take up new industries. The Zila Parishad which is the District Development Council under the Panchayati Raj System, should be restructured and strengthened to undertake a comprehensive economic survey of the entire district and ensure that the industries that can be set up in the area have the necessary support, both financial and technical. The economic surveys so far conducted have tended to be largely pedestrian and give no indication of the strength and the weaknesses of a particular region. The requirement is of a more appropriate and imaginative approach to the problem of industrial growth in the district and greater use of modern innovations and technologies which could make many of the processes viable. The State Small Industries Corporations which have been set up in almost every state would need to take more active interest in the development of industries at the district level and the State Financial Corporations should allot to each district adequate funds out of which new entrepreneurs could be assisted. At the moment, these two bodies have largely been providing financial and technical assistance to persons at the state level due to which the industrial growth at the district level has been sporadic and dependent on the enthusiasm of a few persons, both official and non-official. Therefore, the need is of a more systematic approach to the growth of industries at the district level and below. Though district level seminars on industries have occasionally been arranged and district industrial plans have sought to be formulated in the past but no concrete and fully worked out district level plan has taken place as yet. There should be action programmes with men, materials and money for implementation rather than vague indications of good intentions at the district level.

The upper level of industrial planning is the regional planning at the state and the national levels. At these levels, some degree of industrial planning already exists and no basic change is required. Certainly the anxiety of the states to obtain large public sector projects within the state without sufficient appreciation of the home-work that the state has to do is commendable because in its absence such projects cannot yield the expected benefits. There is a native feeling that a large public sector project will somehow transform the economy of the environment in which it is situated But it has been realised with the experience that this does not happen automatically and a deliberate attempt is required on the part of the state government for developing linkages with the public sector projects and providing suitable facilities and amenities to the entrepreneurs to act as sub-contractors for those projects. But ultimately, the idea of multi-level industrial planning requires close co-ordination between the local industries, industries at the state level and management of the public sector projects for identifying the suitable areas, providing adequate facilities and enabling the units at different levels to manufacture commodities to the required degree of appreciation.

To fulfil the objectives, from the technological point of view, there is already a considerable amount of knowledge at the national and regional laboratories for utilisation. The State Small Industries Corporations should set up demonstration plants for such processes to assure the new entrepreneurs of the feasibility. The technology should be applied at all the levels subject to their suitability for the projects. There is also the need for scientific agencies to look upon the development planning in the district as part of their own effort. The appropriate use of the scientific and technological capabilities available within the state would make ultimately the planning of industry at the district and grass-root levels a reality.

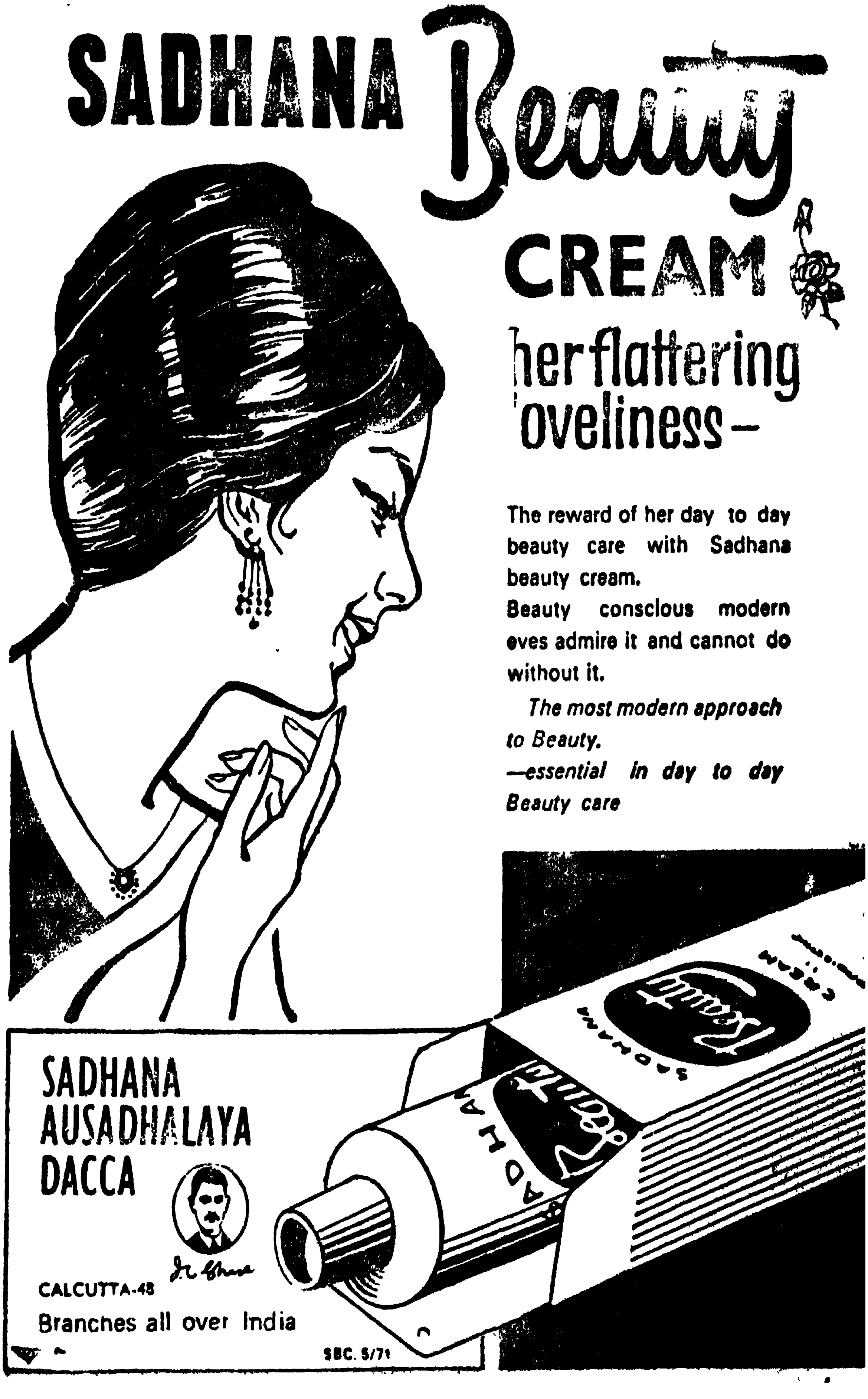
Adequate funds, earmarked for each district would also need to be provided to be utilised for the specific purpose of generating new industrial growth. For this purpose, a District Industrial Development Agency should be established with the District Collector as the Chairman, and the Chairman of Zila Parishad, representatives of Industries Department, Development Corporation and Local Industrial Associations as members. Such an agency could be provided with funds of about rupees one crore for each district to undertake several tasks in the identification of entrepreneurs, selection of projects, preparation of meaningful techno-economic surveys and also to provide 'seed capital' for the industrial schemes. Unless such specific funds are made available to each district, there is a tendency even within a state to monopolise the resources meant for industrial growth of the state as a whole by a few districts.

Another important lacuna in the planning for industries at the district and sub-district levels is the lack of adequate technical back-up to potential entrepreneurs. The District Industries Officers have often tended to view their role as merely regulatory and virtually they do not have the aptitude to undertake promotional work in a meaningful fashion. Even the local technical institutions have often no specific expertise to help the entrepreneurs. Therefore there is the need for a high level industrial consultant in each district who could advise the entrepreneurs on the type of industries they can undertake. On the other hand, there should be an appropriate machinary at the district level that is capable of identifying industries suited to the needs and potentialities of the areas through techno-economic surveys and feasibility studies, undertaking integrated planning, developing infrastructural facilities in selected growth centres located in the areas and providing a package of financial, marketing and other servces to potential entrepreneurs for setting up new units in such areas.

If these dimensions take place and suggestions are put into practice, the identified new centres of industrial growth at the lower level would develop suitable resource or need-based mother projects in the areas whereas the industries at the state and national levels would manufacture the commodities taking into account the widespread long-term needs of the people. But there should be a co-ordinated integration of sectoral planning with spatial planning. The whole approach of the existing sectoral pattern of planning should be reversed and schemes of industrial development should emanate from the integrated spatial development plans.

Conclusion

The very objective of multi-level planning for industry is thus, to introduce spatial dimension having close interlinkage between macro, meso and micro levels to carry forward industrial growth to the district and the sub-district levels. The present concentration of industrial growth at the state and national levels should give way to a greater diffusion and more attention should be paid to the industrial progress at lower levels, Balanced regional development and integration of rural-urban economy can be achieved both by 'building up from below' as well as through 'spreading out growth' from the centre to the periphery. The new industrial effort should be woven round agriculture and allied activities so that in rural and semi-urban areas there may be a genuine agro-industrial society with agriculture providing industry the raw material and the industry furnishing the processed commodities to the peasant for consumption. It is only then that industrial planning will have an impact on the lives of the common people and industry as a whole will be able to generate the type of surpluses that can contribute significantly to the national prosperity.



SADHANA Beauty CREAM

her flattering
oveliness –

The reward of her day to day beauty care with Sadhana beauty cream.

Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.

—essential in day to day Beauty care

SADHANA
AUSADHALAYA
DACCA

CALCUTTA-48
Branches all over India

SBC. 5/71

Annual
Inland Rs. 30.00 (Net)
Foreign US $10.00
Postage by surface
US $2.00
This Copy Rs 2.50

REGISTERED NO. WB/NC 80
R. N. No. 5182/57

Published by H. Roy from 10, Galiff Street. Block 5. Suite 64, Calcutta-3
and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh
Lane, Calcutta-6. **Editor : Himansu Roy. Phone : 55-0477**

ECONOMIC AFFAIRS

- Income and Employment of Small/Marginal Farmers and Agricultural Labourers in Punjab
- Impact of Concentration of Operational Holdings and Ownership of Assets on Agricultural Productivity
- The Budget and the Agrarian Economy

Vol. 22, No 12 DECEMBER 1977

Revised Annual Subscription Rates :

India : Rs. 30.00
Foreign : US $ 10.00
Postage : $ 2.00 (by surface)
Single Copy (ordy.) Rs. 2.50

Outstation cheques shall bear Rs. 5.50 extra.
Effective from January 1977.

Sd/ M. Roy
Manager,
Economic Affairs

15 September 1976

ECONOMIC AFFAIRS

Volume 22 December 1977 No. 12

Warning

In an underdeveloped society emergency and democracy are two opposites one is always trying to replace the other. The process is when democracy becomes unworkable through overenthusiasm of the democrats the force of emergency springs up but when the latter moves to work through denials of fundamental human rights the force of democracy re-emerges. This is best proved in case of India. June 1975 emergency was invited by the over zealous democrats but the people voted it out at the first opportunity when they began to feel the suffocation of forced discipline. But the point remains, and logically, whether or not they voted out both emergency and democracy. Perhaps so. In that case a new order was demanded.

The Janata Party unwittingly promised a new order—an order of discipline without force, no primacy but complementarity of matter and mind, no conflict but correlation between food and freedom.

This seems to have failed. Both democracy and emergency have given way to democratic indiscipline—a half-way between the two opposites. This is not a synthesis but a meaningful pause for a social change through upheaval.

The time has come to probe how far, if any, the democratic indiscipline is reflected in the economic trend of the country. Indications are there that the Union budget deficit of Rs. 72 crores for 1978-78 is rising to the height of more than Rs 720 crores. The attributed reason is the increase in Government expenditure by over Rs. 900 crores satisfying the demand of whoever demands whatever, including the states. It is an idle consolation that there is a relatively less increase in money supply ; for the rise in price is possible even within the given supply of money ; the increased activity of black money apart.

The economic content of emergency fell heavily on the inflation oriented economy weeding out the seeds of inflation to a large extent. The currently available huge foreign exchange and buffer food stock are largely the results of emergency. But they have now posed a problem. Export surplus is not an end in itself. Its delayed recycling means, internally, pressure on prices, and, externally, protectionism and revalution. It is not so much felt as yet because the country has enough stocked food to eat, although it is earmarked as 'buffer' against natural calamity or war.

This is well highlighted in a recent statement made by the Union Commerce Minister that while industrial production recorded a rise of 10 per cent in 1976-77, the rise in the first five months of 1977-78 was only 4 per cent. This slow growth rate is said to be the result of failure of industries to use the liberalized import policy. Leaving aside how long the economy will depend on the choice of industrial captains, this is more an effect than a cause. The primary cause is that the industries cannot look confidently at the world market and the home market is growing more non-consumptive due to the increasing expanse of poverty area. In brief the economic wheel is getting entangled again in stagflation, which was one of the economic causes of emergency.

NOTICE

The next issue will come out as the 23rd Annual Number on the 15th February 1978. The price per copy is Rs. 5.00.

Sd. M. Roy
Manager

10. 12. 77

Income and Employment of Small/ Marginal Farmers and Agricultural Labourers in Punjab

Gurtej Singh Mann* and Karam Singh**

The rural poor in India comprises a major section of the population and the improvement of this lot has become an important issue in the Indian planning. Small and marginal farmers and agricultural (landless) labourers consititute majority of the rural poor. The main reasons of their poverty in general have been analysed but it is also strongly felt that amongst these categories themselves there are also families who have much more income than others in the same group. In this context, it is often quoted that a section of the small farmers, specifically called marginal farmers, earn an income even less than that of an agricultural labourer. But these issues have not been investigated in detail. This study is an attempt in this direction. The specific objectives of the study were : (i) To compare the incomes, employment and wages of different categories of small farmers with different categories of agricultural labourers in different region of Punjab. (ii) To study the variation in incomes of small farmers and agricultural labourers and to determine the divide-line where small farmers and agricultural labourers enjoy equal earnings.

Methodology

The study was based on two sources of data. The secondary data were obtained from the project "Cost of Cultivation of Principal Crops in the Punjab State" and the Primary data were collected from the Agricultural Labour Families by survey method. The data refer to 1974-75.

For the farmer's data, the operational holdings of upto 4 hectares were considered to get enough observations which were 50. These observations were scattered as 13, 11 and 26 in the three broad zones of Punjab which could be broadly called as submountaneous zone (zone-I), Central plains (zone-II) and South eastern zone (zone-III). The important crops distinguishing these zones were paddy and maize in zone I, maize and groundnut in zone II and cotton in zone III. The data relating to cash receipts and cash expenses on the farm, family size, number of farm workers, etc. were taken. To arrive at net cash income of the family, the paid up cost were deducted from the cash receipts of the farm (Gross Cash Receipts-total cash costs of farm=Labour Earnings).

---

* Sh. Gurtej Singh Mann is Assistant Farm Economist.

Dr. Karam Singh is Farm Economist, Department of Economics and Sociology, Punjab Agricultural University, Ludhiana.

For primary data, 30 agricultural labour families from each zone were interviewed. The information related to the family earnings, family size, number of family earners and type of employment, number of days a labourer remained employed during different parts of the year and wages earned by each worker of the family, income from other sources like part time, shoe-making, cattle rearing, etc.

Farm size being a key determinant of farmer's income, the farmers were sub-divided into two groups viz. group A farms (farms with a size of upto 2 hectares) and group B farms (farms with a size of 2.01 to 4 hectares). Similarly the type of employment of the agricultural labourers determines the labour's earnings substantially ; accordingly the agricultural labourers were sub-divided into those employed on annual contract basis labourers and those employed as Casual Labourers. Again, the labourers employed on annual contract basis were categorized into those getting a fixed quantity of grains or cash and those sharing an agreed proportion of the produce.

Results and Discussions

The number of earners in the family of the weaker sections is the major determinant of their total income and the family size determines its per capita level. These are given in Table 1. It can be seen that the small farmers had larger family size as well as more number of earners as compared to agricultural labourers. The average family size of the small farmers and agricultural labourers was 7 and 6.20 and average number of earners in the family was 1.82 and 1.49 respectively. This finding led us to study the relationship of family size and number of earners with farm size amongst the small farmers. Accordingly the farmers were divided into two categories viz : those operating upto 2 hectares and those operating 2.01 to 4 hectares. It was found that family size was smaller for farmers operating upto

2 hectares than those operating 2.01 to 4 hectares. A similar pattern was observed in case of a number of farm earners per family.

Thus average family size was 4.75 and 7.71 with 1.58 and 1.89 number of earners for families operating upto 2 hectares and 2.01 to 4 hectares respectively.

The marginal variation in family size and number of earners per family within the State were paramount. There were large families as well as more number of earners in zones I and II than in zone-III. In zones I and II, average family size comprised of more than 7 members and more than 2 farm earners in case of small farmers. Similarly, agricultural labourers families had 7 or more members and 1.30 and 1.90 earners in zones I and II respectively. In contrast, in zone-III average family size of small farmers and agricultural labourers was 6 and 4.50 and there were 1.58 and 1.27 earners in these families respectively.

Earnings

The total yearly earnings of small farmers were found to be the highest (Rs. 6688) in zone-II followed by zone I(Rs. 5238) and zone-III (Rs. 4640) (Table 2). In relation to farm size within the small farms, the farm earnings were markedly low on farms of upto 2 hectares as compared to on farms of 2.01 to 4 hectares being Rs. 2600 and 6100 per farm respectively. On the basis of per unit of land area, these earnings were about Rs. 1600 and Rs.1900 on farms of upto 2 hectares and 2.01 to 4 hectares respectively. Again, the family earnings, on per cultivated hectare basis, were the highest in zone-II, followed by zone-I and zone-III being about Rs. 2400, Rs. 1800 and Rs. 1600 respectively (Table 2).

Also farm earnings per cultivated hectare were lower on farms of upto 2 hectares in all the zones as compared to the earnings on farms of 2.01 to 4 hectares.

The net earnings of farm workers/earners of small farm families and agricultural labour families are given in Table 3. The table shows that the yearly net earnings of a small farmer (worker) were the higest in zone-II (Rs. 3100) followed by zone-III (Rs. 2900) and zone-I (Rs. 2500). The interesting phenomenon about the net earnings per worker was that these were lower in case of small farmers than in case of agricultural labourers employed on share basis system in all the zones. But these were comparatively more than the earnings of an agricultural labourers employed on fixed contract or casual basis system in all the zones. It was also found that the earnings of the agricultural labourers were the highest for those employed on share basis system followed by contract system and casual basis system in all the zones, the average being about Rs. 3200, Rs. 1800 and Rs. 1600 respectively.

It is also evident from table 3 that the annual earnings of a farm earner on farms of upto 2 hectares were significantly lower, being about Rs. 1650, than those of an agricultural labourer which were Rs. 2000. This difference was of a higher magnitude in zone-I, and zone-III where productivity was relatively lower than in zone-II. Thus it is revealed that an agricultural labourer is better placed as compared to a farm worker (earner) of a farm family operating on an average of upto 2 hectares.

The total family earnings and per capita earnings of different categories are given in table 4. It can be seen from the table that the small farmers had higher net earnings, both total and per capita as compared to the agricultural labour families in all the zones. But the earnings of the farm family operating upto 2 hectares were less than the earnings of an agricultural labour family in all the zones. At the state level, it was found that the per capita earnings per month for farm families operating upto 2 hectares and agricultural labour families were very close to each other being Rs. 46 and Rs. 42 respectively. Thus it could be said that farm families operating upto 2 hectares were almost at par with the agricultural labour families.

Employment and Wages

The employment of different categories of farm work force is given in table 5. It was found that the farm worker of a farm family operating farms upto 4 hectares remains employed on a farm for a smaller number of days in a year as compared to a permanently employed agricultural labourer in all the zones. This led to higher earnings per working day for farm families as compared to those of agricultural labour families. (Table 6). This was also found that the agricultural labourers earned a comparatively higher wage in zone-III than the agricultural labourers in other parts of the state. It was the outcome of relatively more employment opportunities/demand for agricultural labourers in zone-III which could be due to relatively larger holdings in this region. It was also found that the farmers with farm size of upto 2 hectares earned a daily wage almost equal to the wages earned by the agricultural labourers i.e. Rs. 6·74 and Rs. 6.86 per day respectively.

Variation in Earnings of Small Farmers and Agricultural Labourers

It was found that in general the agricultural labourers were concentrated in a relatively narrower range of earnings than the small farmers. Also a high proportion of the small farmers as compared to only a few agricultural labourers fell in the lowest earning group. Thus, as many as 34 per cent small farmers had annual earnings of upto Rs. 1000 only per family in contrast to about 4 per cent agricultural labour families who had so low earnings. On the basis of annual earnings per worker and per capita, 30 per cent small farmers belonged to upto Rs. 500 and upto Rs. 100 groups respectively as compared to none of the agricultural labourers who belonged to this lowest earning group.

The small farmers were spread in all the eight income groups and there were 6 per cent small farmers who belonged to the highest income group of more than Rs. 7000 per family or Rs. 4000 per worker. But most of the agricultural labourers were found in four income groups covering Rs. 1000 to Rs. 4000 per family ; to each of these groups 18 to 22 per cent agricultural labourers belonged. In case of income groups on the basis of earnings per worker, 30 and 24 per cent small farmers belonged to income groups of upto Rs. 500 and Rs. 501-1000 as compared to 42 and 44 per cent agricultural labourers belonging to income groups of Rs. 1001-1500 and Rs. 1501-2000 respectively. Again in case of income groups formed on the basis of earnings per capita, 30, 12 and 12 per cent small farmers, belonged to first three income groups of upto Rs. 100, Rs. 101-200 and Rs. 201-300 respectively. In contrast 16, 19, 26 and 12 per cent agricultural labourers belonged to middle four income per capita groups stretching from Rs. 201 to Rs. 600 respectively.

This phenomenon of small farmers concentrating in low income groups and also belonging to all income groups as compared to agricultural labourers concentrating in a few middle income groups could be ascribed to the nature of occupation of the two groups. In case of farmers, the resources that contribute the most are land and labour and the productivity of the labour is associated directly with the productivity and quantity of land that the small farmers own. In case of very small farmers, land is very small and thus the labour earnings very low. As farm size stretches, the labour earnings expand. Since there is a great variation in the land held by different farmers there is a great variation in earnings of different small farm families. But in case of agricultural labourers, the major source of income is the labour which varies a little from one labourer to another and hence the earnings of these families are closer to each other. The coefficients of variation in annual earnings per family, per worker and per capita were 85, 97 and 94 per cent in case of small farmers as compared to 50, 28 and 48 per cent in case of agricultural labourers, respectively.

In order to determine the exact farm size at which the small farmer would earn an income equal to a labourer, a simple regression was fitted as follows :—

$$Y=a+bx$$

where, Y=Labour earnings per capita of small farmers, and,
X=Farm size in hectares.

The fitted regression was $Y=273.93+163.073\ X(r=0.3964)$

Setting Y, i.e. per capita earnings equal to the average earnings of an agricultural labourer at Rs. 499 (simple average), the farm size was found to be 1.32 hectares. At this farm size, the labour earnings per capita of a small farmer would be equal to those of an agricultural labour. A farm size higher than 1.32 hectares would fetch labour earnings to a small farmer more than those of an agricultural labourer and vice-versa.

Conclusions

The following conclusions could be drawn from this study :—

(i) There was a large variation in family size, number of earners per family and total yearly earnings of small farmers and agricultural labourers in different region of the Punjab, the highest being in Zone II (Central Punjab).

(ii) The labour earnings per worker amongst the small farmers varied widely depending upon the farm size group to which they belonged, i.e., upto 2 hectares and 2.01 to 4 hectares. Similarly, labour earnings per agricultural labourer varied widely depending upon their pattern of employment i.e., share of the produce, fixed contract and casual basis.

(iii) The net earnings per worker were lower in case of small farmers than in case of agricultural labourers employed on share basis in all the zones.

(iv) The average annual earnings of a farm earner operating upto 2 hectares were significantly lower, being about Rs. 1650, than those of an agricultural labourer, which were about Rs. 2000.

The same situation was found for total family earnings and earnings per capita. Similarly the daily wage of these two categories was found to be Rs. 6.74 and 6.86 respectively.

(v) In general the agricultural labourers were concentrated in a relatively narrower range of earnings, i.e., mostly in the middle of 4 of the 8 income groups considered in the study, whereas small farmers were scattered in all groups as well as a much higher proportion of theirs belonged to the lowest one or two income groups. The coefficients of variation in annual earnings per family, per worker and per capita were 85, 97 and 94 per cent in case of small farmers as compared to 50, 28 and 48 per cent in case of agricultural labourers, respectively.

(vi) Fitting a regression of labour earnings per capita on farm size and setting earnings equal to the average earnings of an agricultural labourer, it was found that at the farm size of 1.32 hectares, the earnings per capita of the small farmers and agricultural labourers would be the same. The farm size higher than this would fetch labour earnings per capita to a small farmer more than those of an agricultural labourer and vice-versa.

Table 1

Average Family Size and Number of Farmers in Small Farm Families and Agricultural Labour Families, Punjab.

Zone	Category	Family members			
		Adults	Children	Total	Earn
I.	*Farmers* :				
	Upto 2 hectares	4.00	0.33	4.33	1.80
	2.01-4 hectares	5.30	3.50	8.80	2.10
	Average	5.00	2.77	7.70	2.08
	Labourers	2.90	4.10	7.00	1.30
II.	*Farmers* :				
	Upto 2 hectares	5.00	2.00	7.00	1.50
	2.01-4 hectares	5.40	3.20	8.60	2.20
	Average	5.36	3.09	8.45	2.14
	Labourers	4.88	2.22	7.10	1.90
III.	*Farmers* :				
	Upto 2 hectares	3.38	1.25	4.63	1.50
	2.01-4 hectares	4.83	1.78	6.61	1.61
	Average	4.38	1.62	6.00	1.58
	Labourers	2.33	2.17	4.50	1.27

Table 1 Contd.

Zone	Category	Family members			
		Adults	Children	Total	Earn
State Farmers :					
	Upto 2 hectares	3.67	1.08	4.75	1.58
	2.01-4 hectares	5.11	2.60	7.71	1.89
	Average	4.76	2.24	7.00	1.82
	Labourers	3.37	2.83	6.20	1.49

Table 2

Labour Earnings and Operational Farm Size for sample farmers, Punjab

Zone	Group	Farm Size (Hect)	Farm Earnings Per holding (Rs.)	Farm Earnings Per hecta (Rs.)
I	Upto 2 hect.	1.60	2382.97	1489.35
	2.01-4 hect.	3.31	6095.16	1841.44
	Average	2.91	5238.50	1800.17
II	Upto 2 hect.	1.42	2914.06	2052.15
	2.01-4 hects.	2.90	7065.52	2436.39
	Average	2.77	6688.11	2414.48
III	Upto 2 hect.	1.78	2655.46	1491.83
	2.01 to 4 hect.	3.43	5521.52	1609.77
	Average	2.92	4639.66	1588.92
State	Upto 2 hect.	1.71	2608.89	1562.21
	2.01-4 hect.	3.26	6078.80	1864 66
	Average	2.88	5246.02	1821.53

Table 3

Labour Earnings of Different Categories of Farm Work-Force in Punjab

(Rs.)

Zone	Labour Earnings per farm worker						
	Small Farmers			Agricultural Labourers			
	Upto 2 Hect	2.01-4 Hect.	Average	Share basis	Contract basis	Casual basis	Average
I	1323.87	2902.46	2518.52	2698.78	1640.80	1490.00	1788.22
II	1942.71	3211.60	3125.28	3134.57	1775.55	1643.49	1882.21
III	1770.31	3429.52	2936.49	3475.09	1947.67	1736.67	2454.89
State	1651.20	3216.30	2882.43	3178.74	1788.45	1639.58	2017.25

Table 4

Total and per capita earnings of Small farm families and Agricultural Labour Families in the Punjab

Annual Labour Earnings (in rupees)

Zone	Small Farm Families						Agricultural Labour Families	
	Per Family			Per Capita			Per family	Per capita
	Upto 2 hect	2-4 hect	Average	Upto 2 hect	2-4 hect	Average		
I	2382 97	6095.16	5238.50	550.34	692.63	680.32	2756.80	393.83
II	2914 06	7065.52	6688.11	416.29	821.57	791.49	3494.79	492.22
III	2655.46	5521.52	5639 66	573.53	835.33	773.28	3083.72	685.27
State	2608.89	6078.80	5246.02	549.24	788.43	749.43	3111.77	501.90

Table 5

Annual Employment of Different Categories of Farm Work-force in the Punjab

(A man day=8 hr)

Employment of Farm-force (Man days)

Zone	Small Farm Workers			Agricultural Labourers			
	Upto 2 hect	2-4 hect	Average	Share basis	Contract basis	Casual basis	Aver
I	243	257	254	336	321	237	285
II	242	305	302	352	343	235	295
III	247	318	297	334	334	223	305
State	245	297	286	339	335	233	294

Table 6

Labour Earnings per working day for different categories of Farm work-force in Punjab

Wages Earned (in Rs./Day)

Zone	Small Farm Workers			Agricultural Labours			
	upto 2 hect	2-4 hect	Average	Share basis	Contract basis	Casual basis	Average
I	5.45	11.29	10.24	8.03	5.11	6.29	6.27
II	8·03	10.53	10.35	8.91	5.18	6.99	6.38
III	7.17	10.79	9.89	10.41	5.83	7.79	8.05
State	6.74	10.08	10.83	9.38	5.34	6.91	6.86

Impact of Concentration of Operational Holdings and Ownership of Assets on Agricultural Productivity Among Rural Indian Cultivators' Households

Chandra Shekhar A. K.*

1. Introduction

While the contributory value of such physical inputs as rainfall, irrigation and fertilizer-use to agricultural yields has been studied extensively, the similar value of various 'invisible' agricultural inputs has not been studied in much depth. Of the various invisible inputs, reduction in concentration of operational holdings and ownership of assets can be intuitively expected to have a significant impact on agricultural productivity. This paper is an attempt at measurement of this impact on cereal yields not only *per se* but also vis-a-vis other inputs such as rainfall, irrigation and fertilizer-use. The following sections of the paper set out the working hypothesis adopted for the study, the methodology of analysis, analysis results, policy recommendations and conclusion, in that order.

2. Working Hypothesis

It would be appropriate at the outset to set out the extent of concentration in Indian agriculture vis-a-vis the levels of cereal yield and input-use, so as to gain a broad idea about the order of their relative magnitudes.

Apart from the desirability of reduction of inequalities in rural asset ownership pattern on purely social grounds, reduction in such inequalities could also be expected to hasten the improvement in agricultural productivity. Reduction in inequalities through various rainfall, I percentage of area under cereals under irrigation, F fertilizer use in kg/ha, and C the Lorenz Ratio of concentration of total asset ownership. The exponents are elasticity coefficients of y w.r.t. various explanatory variables, viz. R,I,F and C. From Annexure III, it may be seen that all the elasticity coefficients, save the one in respect of fertilizer-use, are statistically significant in terms of t-values. The most significant coefficient is the one in respect of irrigation, followed by those in respect of rainfall and concentration. The differences in their statistical significance in terms of t-values are explainable. Whereas the observed values in respect of irrigation relate wholly to cereals, those in respect of rainfall, fertilizer-use and concentration do not relate wholly to cereal-growing areas/cultivators and are in the nature of "atmosphere" variables specific only to a whole state/union territory irrespective of the crops grown. This is clearly a major methodological limitation of the study. A distinct methodological advantage lies in using crop-specific explanatory variables, which however is at the present faced with dearth of necessary data and possibly also conceptual fuzziness in getting crop-specific data in a multiple/inter cropping system. Despite the high level of aggregation involved in using state-level observations, the statistical significance of the coefficients estimated is quite high. In view of the large differences in rainfall, irrigation, fertilizer use and possibly concentration also within individual states, the extension of the type of study attempted here to the district level may be even more useful from a policy point of view, and as such the results of this study may be taken to be indicative and of broad and tentative applicability.

---

* New Delhi.

The numerical values of the elasticity coefficients and their signs confirm our tentative working hypothesis adopted at the start of our study. The elasticity coefficient in respect of concentration is the highest in terms of absolute numerical value among the explanatory variables studied. Concentration has the maximum impact on cereal yields in elasticity terms among the 4 factors studied, irrigation and rainfall possessing hardly one-fourth of the casual force of concentration in altering cereal yields. Having vindicated the working hypothesis in physical terms, analyzis of the relative impact of concentration vis-a-vis other factors on cereal yields in benefit-cost terms is now in order.

For the three controllable explanatory variables, viz. irrigation, fertilizer-use and concentration of asset-ownership, the results of the cost-benefit analyzis are as follows :

Factor	Base Period	Unit	Base Level	Elasticity	B/C Ratio	Intnl. Rate of Return
1. %ge Area Irrigated (Cereals)	'70-71	%	28.1	0.276	2.1	25%
2. Average Yearly Fertiliser-use	'69-72	kg/ha	14.1	0.095	0.2	—ve
3. Lorenz Ratio (Asset-ownership)	1971	Ratio	0.58	—1.116	11.6	104%

Note : 1. Elasticities are w.r.t. cereal yield.

2. B/C Ratio is the ratio between net benefits-and capital costs.

3. Investment costs in respect of reduction of concentration of asset ownership are estimated on the basis of current level of outlays on land reforms, SFDA, MFAL, etc. programs, which seek to increase the asset ownership of small farmers.

The last two columns of the above table substantially add to the strength of the results obtained from our regression analysis based on physical values. The above results bolster the hypothesis adopted that reduction in concentration of asset ownership is not only a kind of invisible input to agriculture but that it is a much more effective and economical input than the traditional physical inputs on which great faith has hitherto been placed in developing Indian agriculture, viz. irrigation and chemical fertilizer-use. The negative return shown in respect of fertilizer-use indicates the need to find cheaper substitutes to chemical fertilizers like use of recycled animal and urban wastes, green manure, inter-cropped legumes, etc., which besides helping fuller utilization of local endowments, could save investment and foreign exchange costs substantially.

5. Conclusion & Policy Recommendations

Despite the various methodological limitations of the study enumerated in the preceding sections, the results of the analysis attempted in this paper unmistakably point to the desirability of reduction of inequalities in the distribution of assets, especially the off-farm assets for reasons to be detailed below. Unfortunately, the efforts in this regard in the past have been far from satisfactory as the following table of concentration measures at different points of time over a span of two decades shows :

policy measures can be expected to play a role not very dissimilar to those of such crucial inputs as rainfall, irrigation and fertilizer-use. The trend of annual cereal yields, input-use levels and public efforts to reduce concentration suggests the adoption of the tentative working hypothesis that cereal yields are positively related to input-use levels and negatively to concentration of asset ownership and operational holdings. With this hypothesis we may now set out to measure the impact of concentration vis-a-vis physical input-use levels on cereal yields.

Particulars	Average Cereal yield kg/ha 1969/72	Average Rainfall mm 1901/50	Irrigation (Cereals) 1970-71	Fertilizer Use kg/ha 1969/72	Lorenz Ratio (Assets) 1971	Lorenz Ratio (Opnl. Hldgs) 1970-71
1. All-India Average	916	140*	28.1	14.1	0.582	0.618
2. Coefficient of Variation of State Averages	0.29	0.49	0.59	0.89	0.10	0.15

Note: Detailed figures, explanations and source are given in Annexure I.

* Arithmetic Mean of State Averages.

3. Methodology of Analysis

Using the state-level data on the size distributions of operational holdings (rural) as per the Agricultural Census for 1970-71 and of ownership of total assets (rural cultivators) as per the Reserve Bank's All India Debt & Investment Survey for 1971, Lorenz Ratios and Gini Coefficients of Concentration were first computed state-wise as set out in Annexure II.

Thereafter, the Lorenz Ratios of Concentration for total asset ownership and for operational holdings were used in turn as explanatory variables in combination with the observed state-wise values of rainfall, irrigation and fertilizer-use in fitting regression equations to explain state cereal yields. Two alternative mathematical forms of relationship were tested for statistical fit—linear and double-log-linear. To eliminate year-to-year transient fluctuations in rainfall, fertilizer-use and cereal yields, the annual figures were averaged over periods of 50, 3 and 3 years respectively, with the latter two averages centered at 1970-71. 20 states/union territories are represented in the regression study. The actual observations used in the regression analyzis are set out in Annexure I. The summary of the results of the regression analysis is set out in Annexure III. As the double log-linear relationship using Lorenz Ratios of Concentration of total asset ownership was found to give the best statistical fit, the results obtained from this relationship alone have been used in the rest of the sections of this paper.

As the relationships fitted were in terms of physical units, a simple benefit-cost analyzis was also conducted to check whether the results of the regression analyzis insofar as the relative impact of concentration vis-a-vis other inputs was concerned hold good with equal, greater or reduced strength. Applying the elasticity coefficients on the base-level data, the marginal changes at all-India level in the yield and input-use (incl. concentration) levels were computed. Using average prices (averaged over 3 years) and the related investment-output ratios (based on the Plan figures), the values of benefits, and current and investment costs were derived. From these figures, the net benefit-capital cost ratios and the internal rates of return for different inputs and concentration-reduction measures were worked out. We may now proceed to the analyzis of the results of the study.

4. Analyzis of Results

From Annexure III, it may be seen that the regression coefficients for the explanatory variables are most satisfactory in the double-log-linear case using Lorenz Ratio for total asset-ownership. Overall fit it terms of R^{-2} values is only moderately good (R^{-2} values do not exceed 0.70), although the fit in the case of all relationships tried without exception has been statistically significant. This limitation is however inevitable in view of the impossibility of increasing the number of observations in a cross-section study beyond the number of states/union territories (for a state-level study as ours, that is) and the heavy erosion in the statistical degrees of freedom that inclusion of too many explanatory variables would involve. Efforts have however been taken to see that all major explanatory variables are included in the study, and that the variables left out are in fact those whose individual impact on cereal yield is likely to be small. For the preferred relation, i.e. the double-log-linear from using Lorenz Ratio for total asset ownership, the estimator equation is as follows:

$$Y = 2859\ R^{0.2317} I^{0.2762} F^{0.0950} C^{-1.1160}$$

where: Y is the average annual cereal yield, R the normal annual

ANNEXURE II

State-wise Comparison of Average Size and Concentration of Operational Land Holdings and Total Assets Among Rural Cultivators' Households

	Avge. size of Optnl Holdings	Value of Total Assets[2]		Optnl. Hldgs.[1]		Diff. between Assets-Hldgs, Concentration Ratios	
State/U.T·		Lorenz Ratio	Gini Coeff.	Lorez Ratio	Gini Coeff.	Lorenz	Gini
	1970-71	'71-72	'71-72	'70-71	'70-71		
1	2	3			6		8
	Has.						
Andhra Pradesh	2.51	0.609	0.831	0.599	0.680	+0.010	+0.151
Assam	1.47	0.504	0.890	0.444	0.816	+0.060	+0.074
3. Bihar	1.52	0.622	0.798	0.604	0.737	+0.018	+0.061
4. Gujrat	4.11	0.526	0.827	0.488	0.655	+0.038	+0.172
5. Haryana	3.78	0.484	0.719	0.525	0.655	−0·041	+0.064
6. Himachal Pradesh	1.53	0.474	0.824	0.580	0.757	−0.106	+0.067
7. Jammu & Kashmir	0.94	0.423	0.883	0.415	0.870	+0.008	+0.013
8. Karnataka	3.20	0.571	0.837	0.540	0.681	+0.031	+0.156
9. Kerala	0·70	0.635	0.813	0.523	0.828	+0.112	−0.013
10. Madhya Pradesh	4.00	0.534	0.860	0.541	0.609	−0.007	+0.251
11. Maharashtra	4.28	0.547	0.830	0.527	0.625	+0.020	+0.205
12. Manipur	n.a.	0.474	0.906	0.316	0.895	+0.158	+0.011
13. Meghalaya	n.a.	0.475	0.911	0.333	0.877	+0.142	+0.034
14. Orissa	1.89	0.539	0.888	0.492	0.793	+0.047	+0.095
15. Punjab	2.89	0.482	0.601	0.619	0.620	−0.137	−0.019
16. Rajasthan	5.46	0.529	0.853	0.591	0.520	−0.062	+0.333
17. Tamilnadu	1.45	0.587	0.848	0.525	0.787	+0.062	+0.061
18. Tripura	n.a.	0.550	0.889	0.492	0.832	+0.058	+0.057
19. Uttar Pradesh	1.16	0.535	0.835	0.548	0.795	−0.013	+0.040
20 West Bengal	1.20	0.561	0,865	0.477	0.830	+0.084	+0.035
All-India[3]	1.29	×	×	0.758	0.879	×	×

Source : Data used for estimation of the Concentration Ratios have been taken from :

1. All India Report on the Agricultural Census 1970-71, Deptt. of Agriculture, 1975 (Data condensed to 5 size-classes).
2. All India Debt & Investment Survey 1971-72, RBI.
3. NSS 26th Round, Report No, 215. 1971-72.

ANNEXURE III

Summary of Regression Results for Explaining Variations in Cereal Yields in Different States Among Rural Cultivators' Households

Type of Relation	Rainfall mms/yr (1901-50)	Irrigation %(Cereals) (1970-71)	Fertilizer Use(kg/ha) (1969-72)	Lorenz Total Assets (1971)	Ratio Opnl. Hldgs. (1970-71)
(A) *Linear*					
1.	0.1125	10.2078@	6.3925	−183.1901+	—
	(1.471)	(2.360)	(0.830)	(1.833)	
2.	0.0228	13.2666†	0.5403	—	−66.1389
	(0.276)	(3.127)	(0.066)		(0.799)
(B) *Double Log-Linear*					
1.	0.2317×	0.2762†	0.0950	--1.1160+	—
	(1.641)	(2.887)	(1.142)	(1.791)	
2.	0.0867	0.3323†	0-0199	—	−0.1908
	(0.600)	(3.110)	(0.233)		(0.414)

Type of Relation	Constant	R^{-2}
(A) *Liniar*		
1.	1460.5330@	0.6668
	(2.551)	(10.506)
2.	932.8831*	0.6088†
	(1.979)	(8.393)
(B) *Double Log-Linear*		
1.	3.4561	0.5548†
	(0.080)	(6.919)
3.	5.0422	0.4657†
	(0.099)	(5.139)

Note:

1. **Raw data used in the above regression analysis are shown at Annexure I.**
2. **Figures in brackets under the regression coefficients/constants and R^{-2} values are t- and F-values of significance, respectively.**
3. **Superscripts represent confidence intervals within which the figures are significant as follows:**

Symbol	Conf. Interval
×	90,0%
+	92.5%
*	65.0%
@	97.5%
†	99.0%

4. **Coefficients for Lorenz Ratios in the linear form are per 0.1 unit change in the ratios.**

Lorenz Ratio for :	1953-54	1961-62	1971-72
1. Operational Holdings*	0.622	0.592	0.595
2. Ownership Holdings**	0.752	0.717	0.766
Average Size of Holdings (in Has.) :			
1. Operational Holdings*	2.19	2 64	2.20
2. Ownership Holdings**	1.94	1.77	1.56

Note : Above figures have been calculated based on data on distribution of operational and ownership holdings as estimated by NSS Rounds 8th, 16th, 17th and 26th.

* Including households not owning any land.

** Excluding households not operating any land.

From the independent sources of National Sample Survey (26th Round, 1971-72) and the All India Debt and Investment Survey (1971), we are able to compare the Lorenz Ratios of Concentration for ownership holdings (0.766) and total assets (0.582), respectively, which suggest that the non-land assets are more evenly distributed among rural households than land.

In view of the high return from reduction in concentration of ownership of assets as indicated by the study, it would be probably desirable from the social, political and economic angles to tackle the problem of concentration of land ownership through an offsetting spread of the non-farm assets. Through such a spread, subsidiary occupations for the rural households could be created, substantial internal resources generated within the rural sector which could be pumped into the agricultural sector in an increasing measure to finance the much-needed inputs in that sector. This will go a long way in improving the agricultural productivity and rural prosperity specially among the weaker sections of the rural community. The spread of non-land assets among these sections could be achieved through a combination of several measures, e.g. cooperativization, SFDAs, MFALs. increased flow of credit, etc. to strengthen their subsidiary occupations like animal husbandry, cottage industries, agricultural processing, etc.. The above strategy can help solve the problem of rural concentration and thereby help the vast numbers of small and marginal farmers in the country to increase their incomes and indirectly their agricultural production as well. In a country with a large population, agrarian reforms are likely to increase the ranks of the small and marginal farmers, but the strategy suggested here would ensure that they do not continue to wallow in poverty but that they are enabled to look forward to leading more prosperous and fulfilling lives.

ANNEXURE I

State-wise Observed Concentration Ratios, %ge of Irrigated Area under Cereals, Fertilizer Consumption per hectare, Average Annual Rainfall and Average Annual Cereal Yields

State/U.T.	Concentration Ratio					
	Value of Total Assets 1971	Operated Area 1970-71	%ge of Area Irrigated (Cereals) 1970-71	Avge. Fertilizer Consn. during 1969-72	Avge. Yrly. Rainfall during 1901-50	Avge. Yrly. Cereal Yield in kg/ha during 1969-72
1	2	3	4	5	6	7
1. Andhra Pradesh	0.609	0.599	44.5	23.3	893	897
2. Assam	0.504	0.444	33.2	2.7	2142[1]	959
3. Bihar	0.622	0.604	30.5	10.3	1203[2]	869
4. Gujrat	0.526	0.488	12.2	14.3	977[3]	830
5. Haryana	0.484	0.525	51.0	15.2	483	1375
6. Himachal Pradesh	0.474	0.580	17.5	5.9	1485	1227
7. Jammu & Kashmir	0.423	0.415	37.1	5.7	995	1342
8. Karnataka	0.571	0.540	16.3	14.3	1213	891
9. Kerala	0.635	0.523	55.1	23.1	2996	1464
10. Madhya Pradesh	0.534	0.541	9.5	4.2	1135	690
11. Maharashtra	0.547	0.527	9.2	10.2	1223	478
12. Manipur	0.474	0.316	41.9	3.5	2389	1341
13. Meghalaya	0.475	0.333	33.2	n.a.	2774	1019
14. Orissa	0.539	0.492	19.1	4.4	1482	885
15. Punjab	0.482	0.619	80.8	42.2	672[4]	1722
16. Rajasthan	0.529	0.591	16.6	3.8	704[5]	589
17. Tamilnadu	0.587	0.525	60.2	38.7	1034[6]	1405
18. Tripura	0.550	0.492	6.3	0.9	2101	938
19. Uttar Pradesh	0.535	0.548	36.6	20.0	966	963
20. West Bengal	0.561	0.477	28.3	12.1	1435[7]	1311
All-India	0.582	0.618	28.1	14.1	n.a.	916

Note :

[1] Excluding Mizoram, Nagaland, Meghalaya.

[2] Plains only.

[3] Excluding Saurashtra and Kutch.

[4] Excluding Haryana and Himachal Pradesh,

[5] Eastern Rajasthan only.

[6] Excluding Nilgiris.

[7] Excluding Hills.

India's Exports of Engineering Goods with Socialist Countries (1961-71)—An Analysis of Growth, Diversification and Concentration

B. N. Verma*

The purpose of this paper is to single out the contribution of exports of engineering goods as a dynamic element in India's export with socialist nations and to examine the changing pattern of such exports during the period 1961-71 with a view to exploring the implications of these changes for export policy of India with socialist bloc relating to these goods.

In first part of the paper the growth and pattern of India's exports of engineering goods with socialist nations over the period 1961-71 has been analysed. Further, in order to study whether the growth of exports of Indian engineering goods has been accompanied by increasing or decreasing concentration (or its converse namely diversification) in terms of commoditywise composition and geographical composition and whether such increase or decrease has been statistically significant ; the relevant index of concentrations over time has been prepared. Because one of the important considerations of an efficient export policy is whether to concentrate export-potentiality to a particular group or subgroup of items and to a particular group of nations or to diversify it in other directions. Fitting a simple regression model to the prepared concentration index of commodity and geographical composition, the concentration elasticity of commodity and geographical composition over time and again concentration elasticity of commodity composition over geographical composition have been calculated.

For the purpose of this paper the term "engineering goods" include all engineering goods covered by the Engineering Export Promotion Council. This includes 81 commodity-groups of engineering goods.

The raw data on India's export of engineering goods with socialist nations have been taken and in some cases have been worked out from the "Home Bulletin" of Export Promotion Council.

---

*University Department of Economics, Bihar University, Muzaffarpur, Bihar.

Methodology

In order to test hypothesis whether with the changing composition and direction of India's exports of engineering goods to the socialist nations there has been more diversification commoditywise or destinationwise (geographical) the commodity concentration index and geographical concentration index have been prepared and analysed by fitting to them the simple regression model of $y=a+bx$ type.

The concentration indices have been constructed on the basis of Michaely's treatment of Gini-Hirschman concentration index. According to Michaely the commodity concentration means the degree of concentration involved in the commodity structure and geographical concentration means the concentration involved in distribution of exports among countries. This is worth-mentioning here that the concept of concentration index used in this paper is slightly different from Michaely. According to Michaely, co-efficient of commodity concentration, say C, is defined as where Xij stands for the value of exports of country J of

$$C=100\sqrt{\sum_{t}\left(\frac{X_{ij}}{X_j}\right)^2}$$

commodity is to the rest of the world and Xj stands for total value of exports of country J. Since the present analysis concentrates on the export of engineering goods to the socialist countries only and since these items form a small proportion of total exports, the partial commodity concentration index for export of engineering goods to socialist countries has been constructed on the basis of the following formula :

$$C_E=100\sqrt{\sum_{e}\left(\frac{X_e}{X_E}\right)^2}$$

Where Xe means value of India's exports of the engineering goods to the socialist nations and X_E stands for total value of India's engineering exports. There is a direct correspondence between the co-efficients of commodity concentration as defined by Michaely and the partial index have been devised here. The relation is—

$$C=100\sqrt{\sum_{g}\left(S_g^2C_g^2\right)}$$

where Cg stands for concentration index of gth group of items and Sg for share of gth group of items in total value of exports. Thus, if total exports are divided among engineering (sector E) and non-engineering (sector NE) then :—

$$C_E=\frac{100}{S_E}\sqrt{\left(C+S_{NE}C_{NE}\right)\left(C-S_{NE}C_{NE}\right)}$$

where C_E stands for concentration in engineering exports.

Similarly the co-officient of geographical concentration denoted by G_E has been constructed on the basis of

$$G_E = 100 \sqrt{\sum_{r} \left(\frac{X_r}{K_E}\right)^{2}}$$

where X_r stands for India's export of engineering goods to rth country of destination.

Here too a direct relation can be established between geographical concentration index for overall exports and that of engineering goods alone.

The index of commodity concentration (C_E) has been constructed using the time series of annual exports (in post-devaluation rupees) of 81 commodity groups of engineering goods ennumerated for the years 1960-61 to 1970 71. Further the index of geographical concentration (G_E) is based on the annual time series data of exports of all engineering goods in post-devaluation rupees to the countries in socialist bloc (U.S.S.R., Poland, Rumania, Bulgaria, Czechoslovakia, Yugoslovia and East Germany) over the years 1960-61 to 1970-71.

The original data on commoditywise composition of 81 commodity groups of engineering goods and countrywise composition of the total of such exports to the socialist countries under consideration are not reproduced here to save space. [For this one may consult the issue of the Home Bulletin of the Engineering Export Promotion Council (EEPC), December 21, 1972).

The past foreign trade experiences have witnessed the fact that India can no more face the rising competition in international market with its traditional export composition. For India it is essential to break up new ground in the field by introducing the export of non-traditional commodities in which the engineering goods have emerged as an important element. Engineering goods have occupied a leading position in the export composition of India specially with the East European socialist countries and other socialist countries also which have emerged as important trade partners of India during last decade (1961-71) particularly through their "rupee trade" agreements with. India's engineering goods are successfully making efforts to establish themselves not only in the markets of socialist bloc rather in the international market as a whole. India's export of engineering goods recorded a high rate of growth during 1956-75. The level of export was about Rs. 5 crores two decades ago, it increased to Rs. 338 crores in 1974-75. With socialist nations mainly with East Europian countries the value of export of Indian engineering good was only worth Re. 1 lakh in the year

1960-61, it rose up to the value of Rs. 223 lakhs in 1965-66, Rs. 1067 lakhs in 1969-70 and as much as Rs. 1231 lakhs in the year 1970-71.

Table—1

Trends in India's export of engineering goods with socialist bloc and other groups of countries.

Index of export values (Base 1960-61 = 100)

Groups of countries	1960 61	1965-66	1969-70	1970-71
South East Asia	100	221'17	556'75	573'20
West Asia	100	249'13	824'91	877'16
Africa	100	286'56	1484'57	1719'40
Socialist Block	100	22300 00	106700'00	123100'00
West Europe	100	478'68	1496'72	1665'57
North America	100	384'00	2104'00	1940'00
South America	100	45'45	445'45	290'90
Others	100	369'50	1365'21	1339'13
Total	100	282'18	982'65	1105'12

Source : Kothari s Economic and Industrial Guide of India (1973-74 (Engineering Industries), Page 9.

The above table shows an abnormal rise in India's export of engineering goods with socialist bloc compared with other groups of countries. Where this export has increased from 100 level in 1960-61 to 248'17, 478'68 and 384'06 in 1965-66 in cases of West Asia, West Europe and North America respectively the index of export has even fallen in case of south America (45 points in 1965-66 from 100 in 1960-61), the growth in export of India's engineering goods with socialist bloc can be marked to rise from 100 level in 1960-61 to as high as 22300 level in 1965-66, 106700 in 1969-70 and further 123100'00 in the year 1970-71. Though a continous growth in India's export of engineering goods with South East Asia, West Asia, Africa and West Europe has also occurred between 1960-61 to 1970-71, but the magnitude of growth has been maintained at the highest level in case of socialist countries. This is mainly due to the facilities under bilateral Rupee trade agreements of India with the Eastern European socialist countries. To analyse the above trend further the growth rates of the Indian export of engineerig goods during the period under study have been calculated and shown in the following Table.

Table No. 2

Growth rates in India's export of engineering goods with socialist bloc and other groups of countries

Rate of growth (Percentage change over previous year)

	Rate of Growth in 1965-66 over 1960 61	1969-70 over 1965-66	1970-71 over 1969 70	1970-71 over 1960-61	Annual % rate of growth during 1960-61 to 1970-71
South East Asia	121·62	151·73	29·53	473·19	47·32
West Asia	149·13	231 11	63·34	777·16	77·72
Africa	186·57	418·05	15·82	1619·40	16·19
Socialist Block	22200·00	378·47	15·37	123000·00	12300·00
West Europe	378·68	212·67	11·28	1565·00	156·50
North America	284 00	444·91	—7·79	1840 00	184·00
South America	—54·54	880 00	—34·69	190 90	19 09
Others	267·56	369 41	—1·91	1239 13	123·91
Total	182·18	248·23	12·46	1005·11	100·51

Source —Based on Table no 1

The above table also confirms the comparatively higher rate of growth of India's export of engineering goods with the socialist bloc (22200·00, 378·47 and 15·37 percentages in the years 1965-66, 1969-70 and 1970-71 over their previous years). Though in 1969-70 the rate of growth has been more pronounced than socialist bloc in case of Africa, North America and South America (418·05, 447 91 and 880·00 respectively) but the overall rate of growth during the whole period under study (i.e, annual percentage rate of growth during 1960-61 to 1970-71) has been very much high (12300·00%) in case of socialist bloc than other groups of countries.

II

As pointed out earlier in order to study the degree of concentration and diversification in commodity and geographical composition the concentration indices have been prepared for them.

The computed index numbers for measuring the degree of concentration of exports of engineering goods over the years 1960-61 to 1970-71 both in terms of the commodity composition (Cx) and of the geographic concentration (Gx) are given in the following Table.

Table no. 3

Concentration Indices for India's exports of engineering goods to socialist nations (1961-71)

Years	Commodity index (Cs)	Geographical index (Gs)
1960-61	0·094787	1·64249
1965-66	7·49076	3·6952
1969-70	10 29227	7·33542
1970-71	10·55836	7·59455

As indicated in the above table, the level of concentration index is higher in case of commodity composition than that of geographical composition. The range of variations of commodity index is between 0·094787 (1960-61) and 10·55836 (1970-71). Similarly the range of variation of geographical index is between 1·64249 (1960-61) and 7·59465 (1970-71). Thus India's exports of engineering goods to socialist countries are more concentrated geographically than commodity wise. But as the values of concentration both in commodity composition and in geographical composition of India's export with socialist nations may be said to be increasing during the dacade 1961 to 1971.

The above finding may be supported by the following trend analysis of the time series of index C_s and G_s over the period under consideration.

$$C_s = 6{\cdot}004 + 1\ 04921T \; ; \; R^2 = 0{\cdot}9\ 6288$$

[t = 6·61559 significant at 5% level]

As may be seen from the above trend equation (where t stands for time), the coefficient of the time variable is positive (+ 1·04921) and statistically significant as seen from the "t" ratio of this coefficient shown in parenthesis. In other words, there has been a good degree of concentration towards particular groups of commodities in India's export of engineering goods to the socialist nations over the time under study. These commodities of increasing importance are mainly automobiles and autoparts, industrial machinary. Bicycle and parts, MS pipes and tube fittings jute textiles and knitting machinery, iron and steel castings etc.

The geographical concentration index of export of Indian engineering goods with socialist nations for the period under consideration also shows the similar increasing trend. This may also be confirmed by the following trend line which has been fitted for the purpose.

$$G_s = 4.44056 + 1{\cdot}626366T \; ; \; R^2 = 0{\cdot}970225.$$

["t" = 9·06910 significant at 5% level]

The co-efficient of the time variable in the above equation shows a positive sign and is statistically significant at 5% level as seen from the "t" ratio given in the paranthesis. The index of determination (R^2) is also above 0·5 confirming the hypothesis that the geographical concentration of India's export of engineering goods to the socialist countries has significantly increased towards particular country or countries (mainly to U, S. S. R.) over time under consideration.

In the present analysis the Herschman's and Michaely's hypothesis regarding the relationship between geographical concentration and the commodity concentration has been also tested for the period 1961-71 by fitting the following function :

$$G_E - \left[\begin{array}{l} 1{\cdot}48644+0{\cdot}50265\ C_E\ ;\ R^2 = 0{\cdot}56183 \\ t = 5{\cdot}3{\cdot}243{\cdot}299, \text{ significant at } 5\% \text{ Level} \\ r = +0{\cdot}76 \end{array}\right]$$

It may be seen from the above equation that the co-efficient of C_E is positive and statistically significant at 5% level, The index of determination R^2 is also 0·56183. Thus the above statistical evidence found out on the relation of G_E to C_E is not inconsistent with Hirschman's and Mischaely's hypothesis that "The geographic concentration is stronger, the stronger the commodity concentration" provided there exists any causal relationship. The correlation co-efficients between C_E and G_E in the above function turns out to be 0·76 which is quite targer than the perfect positive correlation. This may be due to the fact that though India has been recently expanding her exports to Eastern European and other socialist countries, *still a large proportion of her* exports goes to Asian and African countries.

Conclusion

A manifold phenomenal increase has occurred in India's export of engineering goods with the socialist countries during the period 1960-61 to 1970-71. The commodity composition of her engineering exports has also undergone a radical change. Concentration index of commodity composition being continuously increasing India's performance in commodity diversification is not impressive. She still largely depends on a few engineering commodities and few markets in socialist Bloc for bulk of her engineering exports.

High commodity and geographical concentration is known to give rise to price instability in case of primary goods having low elasticity of demand. Various other studies[2] show that the demand for engineering exports are also characterized by low or negative income elasticities. However, insignificant these items of engineering groups might be, it does show that price instability is not totally avoidable in case of some engineering goods. While formulating policy for export promotion of engineering goods for the coming years, every effort should be exercized to encourage the diversification of such exports both in terms of commodity composition and of geographic direction. Greater effort should be put in expanding the exports of such engineering goods which are highly income elastic and also price elastic. The export of those engineering goods which are inelastic in demand both in respect of income and price may be pushed out over time There is also a case for dropping such engineering goods from our list of exports to the socialist countries and also to other countries whose income elasticity of demend is negative and the commodities are of the nature of inferior goods." For this comprehensive studies for estimating such elasticities for these exports would have to be conducted on continuing basis so that necessary changes are brought in export policy time to time. Besides, regular analysis of concentration and diversification in both commodity and geographical compositions of export is also essential for helping in formulating an appropriate export strategy at the national level as well as at the micro level for maximising the foreign exchange earnings.

Notes

1. Michael Michaely, "Concentration in International Trade", (North Holland Publishing Company, Amsterdam 1962), Ch 2 The concept was originally developed by Albert O Hirschman in his "National Power and the Structure of Foreign Trade" (Berkeley and Los Angeles, University of California Press, 1945), Ch VI.

2. See O. P. Sharma and C. D. Wadhva, "Some Empirical Evidence on India's Exports of Engineering Goods, Paper presented at the annual conference of the Indian Econometric Society held at Ahmedabad during Jan. 10-12, 1973. This paper presented estimates of income and price elasticities of demand at the global level for the period 1960-61 to 1970-71 for the following ten selected engineering goods for which data were specifically provided by the Engineering Export Promotion Council (i) Aluminium utensils ; (ii) Bolts and nuts ; (iii) Cast Iron Products ; (iv) Conduit pipes, (v) MS pipes and tubes, (vi) Railway track material, (vii) Galvanised iron buckets, (viii) Transmission line towers, (ix) Steel structural fabricated and (x) Tin plate containers. Out of these ten items, low income elasticity of demand (i) and (x). Negative income elasticity—(vii) Low price elasticity of demand (less than unity)—(ii), (iii), (vi) and (vii), (x).

The Budget and the Agrarian Economy

K. Sain*

In the background of continued deficit financing of substantial magnitude of the earlier years without corresponding increase in supply of funds and services and resulting demand pressure and inflation, the Fifth Plan outlay for the current year 1977-78 has been rightly increased significantly by 27% from Rs. 7852 crs. of the last year to Rs. 9960 crs. Of this, outlay on agriculture and allied services including major, medium and minor irrigation, fertilizer, and cooperative and power attributable to rural sector works out to Rs 3024 crs. This constitutes 30 4% of aggregate outlay of Central, State and Union territories plans. Doubling of the annual rate of growth of irrigation potential of about 2 million hectares is aimed at for the last two years of the Fifth Five Year Plan. Major, medium and minor irrigation works are to be planned and executed as part of national strategy for water use. The most crucial input for applying high yielding farm technology is irrigation. In consonance with a recent World Bank Report, acceleration of rural electrification is needed to expand ground water irrigation facilities. Optimum use of irrigation, in its turn, requires simultaneous increase in supply of credit, fertilizer, extension services and other inputs.

Investment in rural infrastructures like roads, markets, supply of drinking water and in development of ancillary activities like poultry, dairy, forestry, fishery and other agro-based and small scale industries are urgently called for. The budget makes provision for this purpose and recognises the urgent need in this respect.

A provision has been included in the budget for promoting growth of rural industries and for encouraging use of plants and machinery produced with indigeneous knowledge. In case a small industrial unit is located in the rural area, it is entitled to exemption from income tax on 20% of its profit. A big industrial unit or a company seeking investment in a Government approved rural development programme is entitled to tax reliefs. Firms or companies adopting plants and technologies developed in indigeneous laboratories, private or public, or in Universities are entitled to tax reliefs to the extent of 35% of the amount of investment.

---

* Reader in Agricultural Economics, Bidhan Chandra Krishi Viswa Vidyalaya, Kalyani, W.B.

Excise duty on power driven water pumps has been reduced from 10% to 5%. More concessions have been granted to matches produced by cooperative societies. Tax concessions have been proposed for forest products to protect these against depreciation. Excise duty on indigeneous wool tops have been reduced from 10% to 5% a kg. This is expected to decrease its price and increase its demand. The handlom sector gets Rs. 20 crs. and sericulture Rs. 4 crs. with a view to giving a fillip to these rural and labour-intensive industries.

Of course, tax concessions to farm sectors and preferential tax treatment for industries are not enough for developing industrial bases in the rural areas. A proper fiscal policy is to be supplemented by an adequate organizational set up and investment in order that the rural sector be properly equipped with a suitable industrial network and the rural folks, one and all, get some productive and socially useful occupation and earn an income to satisfy his basic minimum needs. Per hectare farm households has to be increased and farm households to be made viable.

A few words of caution may not be out of context in this hour:

First, price rise may attenuate the physical targets in all directions. It may not be possible to contain the deficit in the budget to the small limit of Rs. 72 crs. for a number of reasons. For example, it may not be possible to obtain net external assistance of Rs. 1052 crs if international circumstances take a slight unfavourable term. Another disquieting but almost regular feature of the recent budgetary trends is that a large chunk of the increased budgetary receipts is absorbed by non-productive expenditures such as increased defence outlay, food subsidy, natural calamities and dearness allowances. The budget might have provided for such expenditure at the outset. As pointed out in the Economic Survey: 1975-76, low elasticity of revenue from major tax sources stands in the way of raising resources through taxation. For example, between 1960-61 and
L 1973-74, the coefficient of elasticity of revenue with reference to NNP
towe‚ ₃ around 0.7. Coefficients of elasticity of excise taxes with reference
Out of ~ross value of manufacture and value added by manufacture
Negative
(less than u

Economic Affairs

were respectively 0.50 and 0.61*. If the past budegetary trend of the rate of growth of receipts being higher than that of expediture be any guide, then the deficit in the final budgetary account may be much larger than the original estimate unless, of course, the new Government be able to invent extra-ordinary methods for discouraging unproductive expenditures and/or for augmenting its earnings. Increase in deficit spending may sustain the upward trend in general price level and farm prices may not lag behind. It is evident from the Reserve Bank of India Bulletin how farm prices and general price level have advanced at an even speed: the parity price ratio of agricultural commodities [(Agricultural Commodities index—all commodities index) × 100] moved from 98.55 in 1962-63 to 103.07 on 25 12.'76.**

Secondly, while provision has been made for doubling the irrigation facilites in the last two years of the Fifth Plan, outlay for production of fertilizer has been maintained intact. Considering the high positive corelation coefficient between the two inputs used in the farms, greater emphasis on fertilizer production was logically warranted.

Thirdly, the raising of exemption limit of the income tax and other tax concessions allowed in the current budget will increase disposable income and generate demand pressure.

Fourthly, bad weather conditions during the current year may completely change the situation and add to the severity of excess demand and inflationery pressure.

Fifthly, the doubling of excise duty on branded *bidis* will affect the farming sectors adversely. It is a regressive measure and there will be no wonder if this measure is to be withdrawn very soon.

Sixthly, tax concessions to companies for participating in rural development and other welfare oriented measures may not actually encourage them to undertake such august steps and may, instead, actually help monopolies and further concentration of wealth.

Finally, agriculture has suffered not so much due to lack of resources as due to failure to strengthen the institutional framework. Special efforts are needed for formulating projects on irrigation, fertilizer, credit and power supply and for implementing them through proper organisations. The last year's budget too outlined a strategy for integrated rural development and stressed the need for systematic, scientific and integrated use of national resourees as part of the proces. It also indicated the organisation and instrument for planning and implementation. The growth rate of agricultural output could, however, barely keep pace with that of population despite green revolution.

---

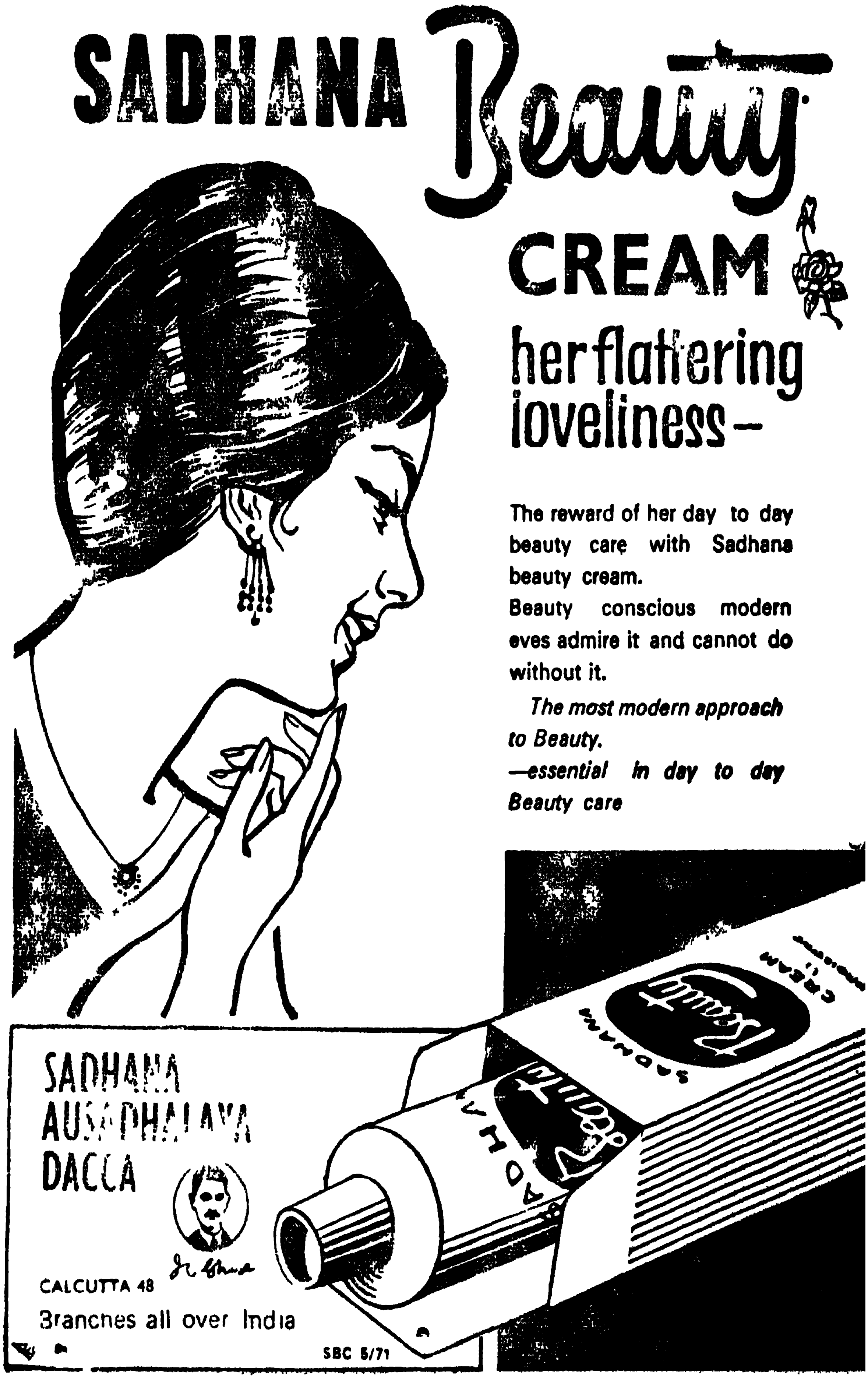
* Government of India. Economic Survey, 1975-76. Delhi : 1976, p.29.

** Reserve Bank of India Bulletin, vol. 38, Feb., 1974, and vol. 30, No. 12, Dec, 1976.

The budget aims at reducing disparity in income and wealth through higher surcharges on income tax, higher rates of wealth tax and indirect taxes on luxury goods like motor car, T.V. sets and imported wools. But it makes life more difficult for the salary earning middle and upper middle classes by enhancing the rate of surcharge for those earning above Rs. 10,000 per annum, retaining the compulsory deposit scheme for another two years and raising excise duty on such goods as radio sets, cigarettes, watches, time pieces, electric fittings and two-wheeled cars. Persons earning annually an income of Rs. 15,000=00, Rs. 20,000=00 and Rs. 25,000 =00 will be required to pay an additional income tax surcharge of Rs. 53=00, Rs. 98=00, and Rs. 160=00 respectively. The provision for tax relief on dividend of Rs. 250=00 is only for those within the income tax exemption limit. In view of the fact that the recipients are required to produce certificates from the tax authorities to that effect, it is very unlikely that this relief will be availed of by more than a very limited number of persons. These measures are likely to affect the savings of the middle and upper middle classes adversely and thereby retard their flow into productive investment in different sectors including the farm sectors. Only a little over 1% of the total employable population of the country is within the income tax bracket. Additional surcharge and compulsory deposit are only very feeble steps towards reducing economic inequality. The Government must reorient the systems of production, distribution and employment and increase expenditure on social services including education, public health and other welfare measures which benefit the poor more than the rich as soon as possible to bring about the desired equity among the people.

The subdued enthusiasm of the businessmen and stock market as reflected through the post-budget retreat of share prices is not, however, fully warranted by the provisions of the budget. Rather, they have several reasons to be happy with it. For example, investment allowance is being extended to almost all industries other than 34 industries listed as producing low priority items like cosmetics. Losses of sick units can now be set off against profits of solvent units taking them over. The budget in fact jettisions one of the oldest shibboleths in tax law by providing that closely held corporations need not distribute dividend to avoid penal taxation. The smallest deficit in several years might have worried the businessmen, but this is certainly welcome step for society as a whole.

The budget does not include comprehensive programme for new employment. It only states that such programmes are being formulated. The sooner it is done the better.



SADHANA Beauty CREAM

her flattering loveliness –

The reward of her day to day beauty care with Sadhana beauty cream.
Beauty conscious modern eves admire it and cannot do without it.

The most modern approach to Beauty.
—essential in day to day Beauty care

SADHANA AUSADHALAYA DACCA

CALCUTTA 48
Branches all over India

SBC 5/71

Annual

Inland Rs. 30.00 (Net)

Foreign US $10.00
Postage by surface
US $2.00

This Copy Rs. 2.50

Published by H. Roy from 10, Galiff Street, Block 5, Suite 64, Calcutta-3
and Printed by him at New Biswanath Press, 12/C, Shankar Ghosh
Lane, Calcutta-6. **Editor · Himansu Roy. Phone : 55-0477**